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SOUTHERN CALIFORNIA MARINE SPORT FISHING:
PRIVATE-BOAT CATCH AND EFFORT, 1975-1976

by
Vickie L. Wine

MARINE RESOURCES

Administrative Report No. 79-11

. June 1979

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SOUTHERN CALIFORNIA MARINE SPORT FISHING:
PRIVATE-BOAT CATCH AND EFFORT, 1975-1976 1/

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ABSTRACT

The catch landed and effort expended by private-boat sport fishermen were studied from July, 1975 through June, 1976, in order to determine the magnitude and impact of one segment of the marine sport fishery in southern California. Fishermen returning from a fishing trip were interviewed at launch ramps, boat hoists, and boat rental locations from Pt. Conception to the Mexican border. This report presents quantitative data and statistical estimates of total effort, total catch, catch of preferred sport fish species, and length-frequencies of size-regulated species.

An estimated 944,000 organisms were landed by 315,000 anglers and 16,500 divers. A large variety of species was landed, but six species contributed over one-half of the catch. Divers landed very few sublegal organisms, but anglers took large numbers of sublegal size fish. Continuance of this study will be necessary to show changes in fish availability, fishing pressure, and compliance with fishing regulations.

1/ Marine Resources Region, Administrative Report No. 79-11, June 1979.

2/ Marine Resources Region, California State Fisheries Laboratory, 350 Golden Shore, Long Beach, California 90802.

TABLE OF CONTENTS

	Page
INTRODUCTION	1
OPERATIONS	2
Sampling plan	2
Sampling locations	2
Statistical analysis	3
RESULTS AND DISCUSSION	3
Effort	4
Catch	5
Length frequencies	8
SUMMARY	9
REFERENCES	10
FIGURES	12
TABLES	23
APPENDIX	36

again studied the private-boat segment of the marine sport fishery. The results of this study were originally published in Marine Resources Administrative Report No. 76-14 (Wine and Hoban, 1976). However, the original data contained sufficient arithmetical mistakes to warrant a revision of the report. The mistakes were corrected and the data reanalyzed. This report provides corrected catch and effort figures and should be used in place of Administrative Report No. 76-14. Reports for each 3-month period of the study are available in Administrative Reports 79-7 through 79-10 (Wine, 1979).

OPERATIONS

Sampling Plan

Field samples were taken at randomly selected launch ramps, hoists, boat rental locations, and marinas from Point Conception to the Mexican border, on all weekends and holidays and on randomly chosen weekdays in accordance with available manpower. Field samplers remained at the sample locations from 1000 to 1800 hr, and an attempt was made to interview all returning anglers and divers. Fishermen were asked about the length of their fishing trip, the number of fishing poles used, and the number of people angling or diving from their boat; and trained samplers identified and counted all fishes, molluscs, crabs, and lobsters in the catches (no data were requested about species caught but not kept). All species with legal minimum size requirements were measured, and six other species were also measured to provide data for life history studies.

Sampling Locations

Sampling sites were located in Santa Barbara, Ventura, Los Angeles, Orange, and San Diego Counties (Figure 1). During the year, 17 launch ramps, 4 boat hoists, 5 boat rental locations, and 7 marinas were sampled.

Those locations which showed exceedingly low levels of use by the public were dropped from the sampling plan since they furnished insufficient data for significant analysis.

LIST OF TABLES

	Page
TABLE 1. List of Species Sampled from Southern California Private Boats	23
TABLE 2. Most Commonly Landed Species	27
TABLE 3. Catch and Effort Estimates for Anglers and Divers	28
TABLE 4. Standard Error of the Estimates	32
TABLE 5. Most Commonly Landed Species in Each County	33
TABLE 6. Occurrence of Sublegal Fishes in Examined Catches	35

INTRODUCTION

The large population of fishermen in southern California exerts heavy fishing pressure on its coastal marine resources. The development of management plans which will protect, conserve, and make use of these resources is imperative, especially in the light of recent extension of the national fisheries conservation zone. The California Department of Fish and Game, in cooperation with the National Marine Fisheries Service, studied the catch landed and effort expended by sport fishermen on privately-owned, trailerable boats in southern California marine waters. The focus of the study was on the number and type of organisms landed, the number of fishermen, the amount of time spent fishing, and the number of sublegal-size organisms landed. This information indicates the magnitude of fishing pressure, the individual species receiving heaviest or lightest fishing pressure, and the degree of compliance with minimum size limit regulations.

The information generated by this study will provide 1) a baseline study for future comparison of catch and effort trends, 2) evidence for adding, deleting, or changing fishing regulations, 3) an indication of the fishing pressure on various species, and 4) supportive material for other agencies to use when assessing proposed action which could affect southern California's living marine resources. The results of the study will focus attention on areas in which management may be necessary.

Southern California's recreational fishery was studied by the Department in 1964 (Pinkas, Oliphant, and Haugen, 1968). Several segments of the sport fishery were sampled, but the major emphasis was on moored boats rather than trailerable boats. Since this study was completed, southern California's fishing population has increased considerably, and boat access to the ocean also has been increased. In 1975 the Department

again studied the private-boat segment of the marine sport fishery. The results of this study were originally published in Marine Resources Administrative Report No. 76-14 (Wine and Hoban, 1976). However, the original data contained sufficient arithmetical mistakes to warrant a revision of the report. The mistakes were corrected and the data reanalyzed. This report provides corrected catch and effort figures and should be used in place of Administrative Report No. 76-14. Reports for each 3-month period of the study are available in Administrative Reports 79-7 through 79-10 (Wine, 1979).

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Those locations which showed exceedingly low levels of use by the public were dropped from the sampling plan since they furnished insufficient data for significant analysis.

Statistical Analysis

The estimates of the numbers and variances of fishing parties, diving parties, anglers, divers, angler-trip-hours, diver-trip-hours, total catch, and catch of selected fish species were determined separately for weekends and weekdays. Monthly estimates were calculated for each county and combined on a 3-month basis for each area.

The data for Santa Barbara and Ventura Counties were combined due to the relatively small amount of data available for each county. The quarterly and yearly estimates are sums of the monthly estimates. Variances of the monthly estimates and of the weekday and weekend estimates were assumed to be additive (i.e. the covariance is zero).

The number of boats which left a sampling area without being interviewed during the sample day was not estimated. Therefore, the estimates reflect only those boats actually sampled.

The estimates are for 26 sample sites only (no marina data were included); but since the majority of fishing activity was initiated from these locations, the estimated catch and effort values may be applied to the entire southern California area. These figures are underestimates since we have no data on fishermen who returned before 1000 hr or after 1800 hr, or who purposely evaded our samplers.

RESULTS AND DISCUSSION

During the year, 26 launch ramps, boat hoists, and boat rental locations were sampled a total of 943 times. We interviewed 54,039 anglers and 2,647 divers who expended 354,293 angler-trip-hours ^{3/} and 14,027 diver-trip-hours ^{3/} respectively. These fishermen landed 151,322 fishes, molluscs, crustaceans, and echinoderms of 177 identified species (Tables 1 and 2). They also landed 2,977 filleted fishes whose species

^{3/} The unit of effort is one hour of trip time per angler or diver. Adjustments were made for those using more than one fishing pole concurrently.

could not be determined.

Effort

The effort unit in this report reflects the entire amount of time spent on a fishing trip, not just the time spent angling or diving. Reliable estimates of actual angling or diving time could not be determined from the fishermen, therefore length of fishing trip was used as the time measurement from which the effort unit was derived. The effort unit is an angler-trip-hour or a diver-trip-hour.

Of the four types of facilities sampled, launch ramps received the heaviest use. Boat hoists were used primarily where launch ramps were not available. Skiff rentals had a small number of boats for hire, and therefore had limited use; they were rarely used by divers. The number of marina-moored boats which were used for fishing was found to be minimal. Persons on only 91 of the 5,500 boats in the sampled areas (less than 2%) reported that they had been fishing during the sample days. No sailboat parties reported that they had engaged in fishing activity. No diving parties were encountered at the marinas.

Angler effort

The highest level of angling effort was expended during the late spring and summer months (May through September), when anglers searched for surface fishes (Figure 2). Effort levels declined after Labor Day weekend and remained moderate during the fall and winter months. During December angler effort was exceptionally low; the holiday season seemed to decrease fishing interest. However, January had very warm, sunny weather, and fishing effort increased. A great increase in effort occurred in May as a result of excellent fishing conditions and good catches of surface fishes.

An estimated 315,000 angler-days (one angler fishing for any length of time during one day) were spent in southern California marine waters. A

SMB-26673

breakdown of the effort levels by county shows that Los Angeles County facilities received much heavier use than those in other counties. Approximately 116,000 angler-days were spent fishing in Los Angeles County; 76,000 angler-days in Orange County; 75,000 angler-days in San Diego County; and 48,000 angler-days in Santa Barbara-Ventura Counties (Tables 3 and 4).

Diver effort

Fluctuations in diving effort were due to the opening and closing of fishing seasons rather than changes in weather conditions. The opening of the season for California spiny lobster, *Panulirus interruptus*, in mid-October was accompanied by the highest level of diving effort for the year (Figure 3). As the season progressed, lobsters became harder to find and diving effort gradually decreased. A low point was reached in February when the season for abalone, *Haliotis* spp., was closed. Diving effort was low in April also, when very turbid coastal water resulted from a few rainstorms. But effort increased soon thereafter as water temperatures rose.

An estimated 16,500 diver-days (one diver who made any number of dives during one day) were spent off the southern California coast. Approximately 5,400 diver-days were expended in San Diego County; 5,000 diver-days in Santa Barbara-Ventura Counties; 3,300 diver-days in Orange County; and 2,900 diver-days in Los Angeles County.

Catch

A great variety of species was landed during the year: 177 species of fishes, molluscs, crustaceans, and echinoderms were identified. Of these species, 37 composed 90% of the identified catch. One-half of the catch was composed of only six species: 1) white croaker, *Gemyonemus lineatus*, 26%; 2) Pacific bonito, *Sarda chiliensis*, 7%; 3) bocaccio, *Sebastes paucispinis*, 5%; 4) barred sand bass, *Paralabrax nebulifer*, 5%; 5) kelp bass, *P. clathratus*, 4%; and 6) Pacific mackerel, *Scomber japonicus*, 4%. The rockfishes, *Sebastes* spp., were well represented in the catch:

46 species accounted for 27% of the identified catch.

An estimated 944,000 organisms were landed by southern California marine anglers and divers. Approximately 275,000 rockfishes, 238,000 white croaker, and 106,000 bass were landed, comprising nearly two-thirds of the catch. Of the more favored game species an estimated 10,000 California halibut, *Paralichthys californicus*; 9,000 California barracuda, *Sphyrna argentea*; and 2,000 white seabass, *Atractoscion nobilis*, were landed. For those species taken almost exclusively by divers, we estimated 22,000 abalones; 15,000 rock scallop, *Hinnites multirugosus*; and 7,000 California spiny lobster were landed.

Seasonal variations

Species composition of the catch varied between seasons as water temperatures and food supplies changed and migratory fishes moved into and out of the area. Surface fish activity was not as great as anticipated in the summer and fall, but good catches of Pacific mackerel and kelp bass were taken. During the late fall and winter surface fishes became scarce when water temperatures decreased, so anglers directed their efforts towards the more available rockfishes. With the coming of spring and a slight rise in water temperatures, surface fishes such as Pacific bonito appeared again in the catch. Large numbers of California barracuda were taken in San Diego and Orange Counties, which resulted in a substantial number of very pleased anglers.

Several species constituted the main part of the catch throughout the year: white croaker; bocaccio; barred sand bass; olive rockfish, *Sebastes serranoides*; vermilion rockfish, *S. miniatus*; and Pacific bonito were consistently among the ten most commonly landed species each quarter.

Location variations

Within the five counties sampled the variety of species in the catch was in direct proportion to the number of fishermen in the area: the more

fishermen, the greater the variety of species in the catch. The numbers of species identified in each county's catch were 101 in Santa Barbara, 117 in Ventura, 152 in Los Angeles, 127 in Orange, and 135 in San Diego. Surface fishes were more abundant and their variety was greater in the three southern counties due to the warmer water in those areas. In the two northern counties, rockfishes constituted the majority of the catch (57%) since they were the most prevalent sportfish available to the anglers. The warm-water fishes do not usually frequent this area.

Although the majority of the catch in Santa Barbara County was composed of rockfishes, anglers also landed good catches of white croaker; kelp bass; king salmon, *Oncorhynchus tshawytscha*; and lingcod, *Ophiodon elongatus* (Table 5). Divers brought in red abalone, *Haliotis rufescens*; California spiny lobster; and rock scallop.

Ventura County anglers landed 37 identified species of rockfishes which composed 52% of the total catch, but white croaker was the most commonly landed single species. Catches of Pacific sanddab, *Citharichthys sordidus*; kelp bass; and lingcod were also frequently taken. Divers landed rock scallop; pink abalone, *Haliotis corrugata*; California sheephead, *Semicossyphus pulcher*; and California spiny lobster.

More than twice as many fishes were landed in Los Angeles County than in any other county. However, a single species dominated the catch: one of every three fishes landed was a white croaker. Other frequently landed species were Pacific bonito; Pacific mackerel; black surfperch, *Embiotoca jacksoni*; sablefish, *Anoplopoma fimbria*; and kelp bass. Relatively few divers fished in Los Angeles County, but those divers who did venture out landed rock scallop; California sheephead; green abalone, *Haliotis fulgens*; and California spiny lobster.

Orange County fishermen did not land large numbers of fish. Instead, they were very selective about the fishes they kept, and brought back only

avored game fishes such as bass, Pacific bonito, California barracuda, and Pacific mackerel. Orange County was the "hot spot" for barracuda during the summer months, with an estimated 6,500 landed. An estimated 2,000 were landed in the four other counties combined. Divers landed mostly rock scallop, green abalone, and California sheephead.

In San Diego County, white croaker was the number one sport-caught fish, although good catches of barred sand bass; spotted sand bass, *Paralabrax maculatofasciatus*; kelp bass; and Pacific bonito were also landed. During the summer months albacore, *Thunnus alalunga*, was a favorite catch. Divers did well in this area, landing red, green, and pink abalones, rock scallop, and California spiny lobster in substantial numbers.

The catches landed at individual sample locations varied depending on the type of offshore habitat and the kinds of fishes that were target species for the area. The ten most frequently landed species at each sample location (Appendix I) reflected both of these factors.

Length Frequencies

The length-frequency data (Figures 4-11) show that large numbers of sub-legal size fishes appeared in the sampled catches (Table 6). The bass species fared relatively well, averaging 84% legal fish, and 99% of the king salmon measured were legal size. However, three of the species highly sought after by fishermen were taken by many people with no regard to the size limit regulations. More than 40% of the California halibut and 30% of the California barracuda measured were undersize. The 1975-76 California Sport Fishing Regulations permitted each angler to possess one white seabass less than 71 cm (28 inches) per day; 94% of all white seabass measured belonged to this category.

Obviously, the white seabass regulation has become merely a bag-limit regulation, allowing the possession of one white seabass of any size per angler per day. Anglers either ignored the size-limit or else were not

SMB-26677

able to recognize a white seabass as such.

The high percentage of sublegal California barracuda and California halibut landed is mostly due to the high demand for those species. Misidentification of small halibut is another contributing factor to the problem. A conservation education program directed towards anglers should be instigated to teach anglers that fishing regulations exist, why they exist, and how to identify those species mentioned in the regulations.

A very small proportion of those species landed primarily by divers were undersize. The abalone species averaged 95% legal, and 97% of all California spiny lobster measured were legal size.

SUMMARY

For a 12-month period during 1975-76, field sampling of catch and effort in the private-boat sport fishery was conducted to provide information on the magnitude of fishing pressure, the individual species and geographical areas receiving heaviest or lightest fishing pressure, and the degree of fishermen's compliance with legal minimum size limits. The results of the study focus attention on potential or already existing problem areas in southern California's coastal recreational fisheries.

At the end of a fishing trip, fishermen were asked about the amount of time they spent on or in the water, and their catch was identified, counted and measured. From this data estimates of total effort, total catch, and catch of selected species were calculated.

An estimated 315,000 angler-days and 16,500 diver-days (one angler or diver fishing for any amount of time during one day) were expended. Highest angling effort occurred in Los Angeles County, while the highest diving effort was in San Diego County. Seasonal variation in the number of fishermen was a function of weather conditions and the availability of favored game species.

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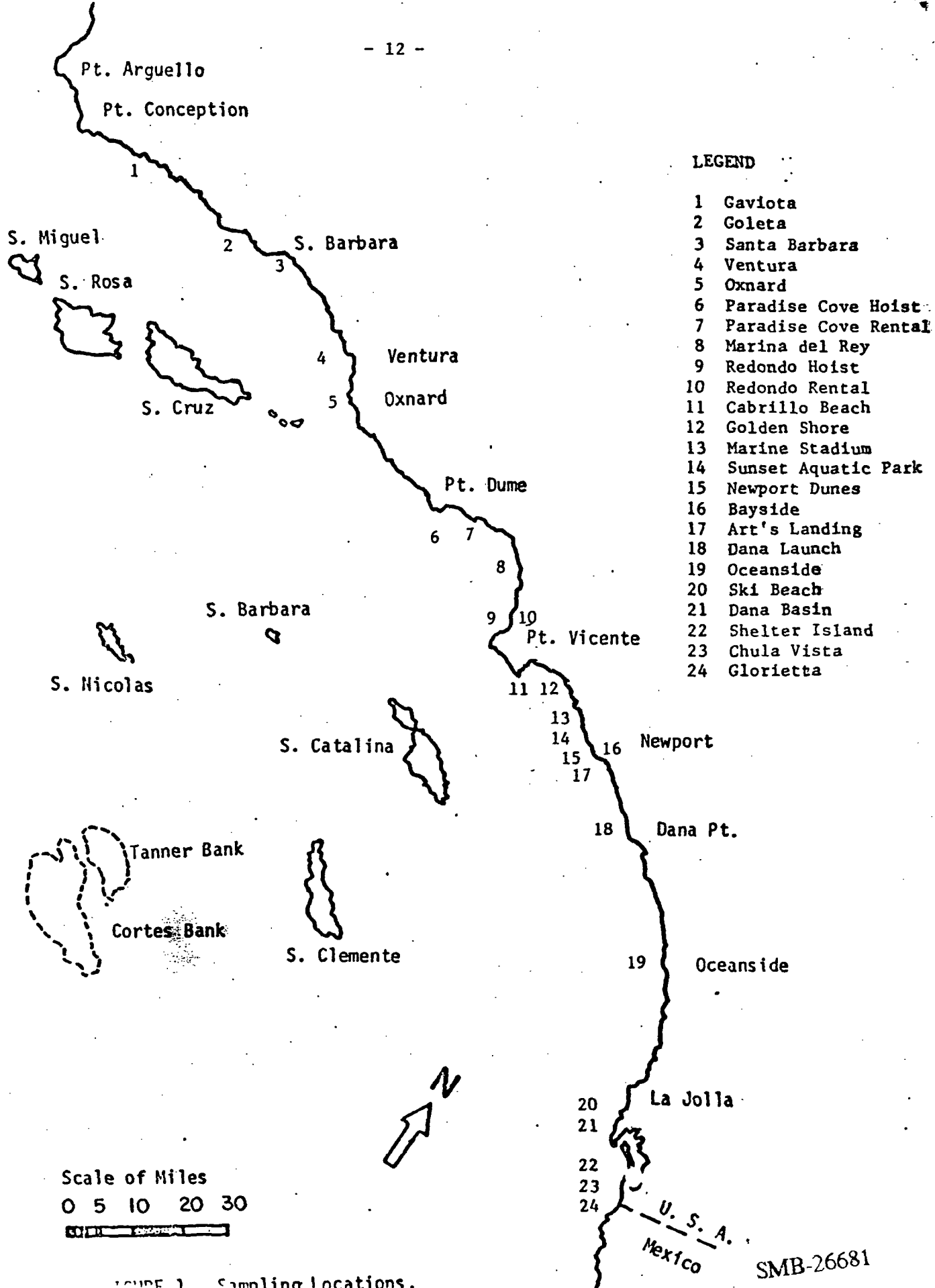
Over 175 species were identified in the catch, but one-half of the catch was composed of only six species: white croaker, Pacific bonito, bocaccio, barred sand bass, kelp bass, and Pacific mackerel. An estimated 944,000 organisms were landed. Of the more favored game species, an estimated 106,000 bass, 22,000 abalones, 15,000 rock scallop, 10,000 California halibut, 9,000 California barracuda, 7,000 California spiny lobster, and 2,000 white seabass were landed.

Divers paid close attention to the size limits on abalone and lobster--less than 5% sublegals were landed. However, anglers landed large numbers of sublegal fishes. More than 40% of the California halibut and 30% of the California barracuda were undersize. Ignorance of the fishing regulations, inability to identify those species with legal size requirements, and deliberate violation of the law are the major reasons for the high percentages of sublegal fishes landed.

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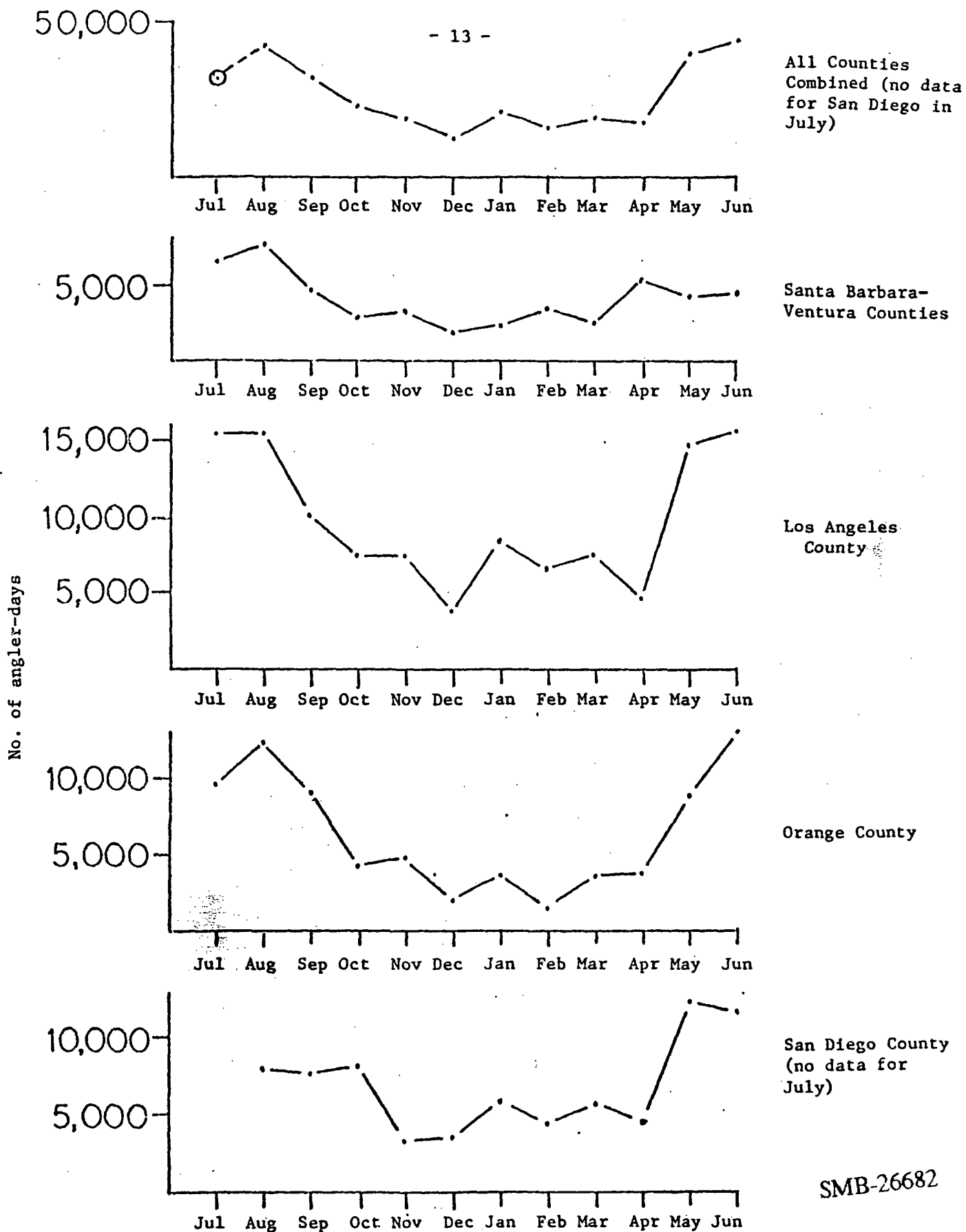


FIGURE 2. Estimated number of angler-days per month, July 1975
through June 1976

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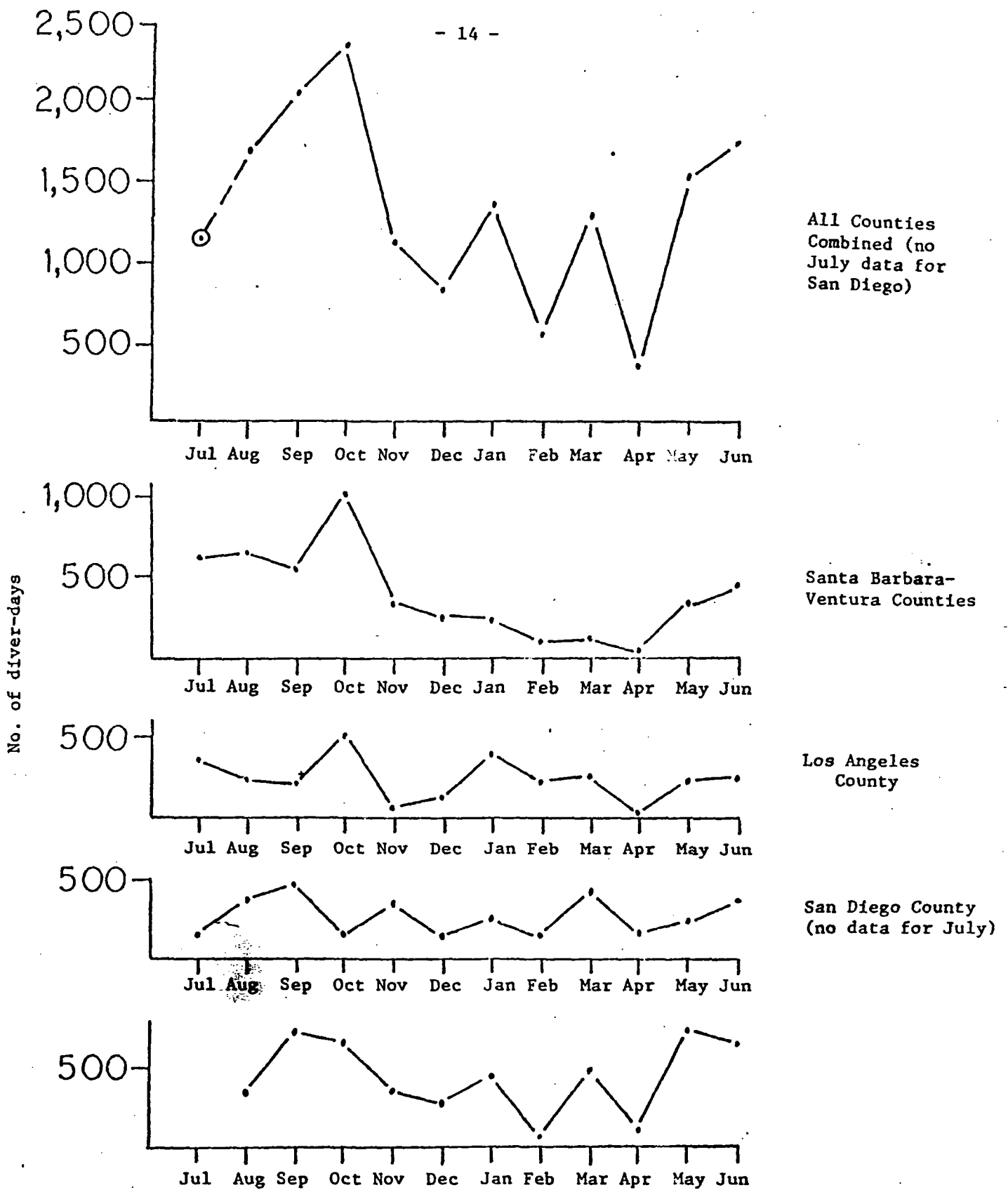
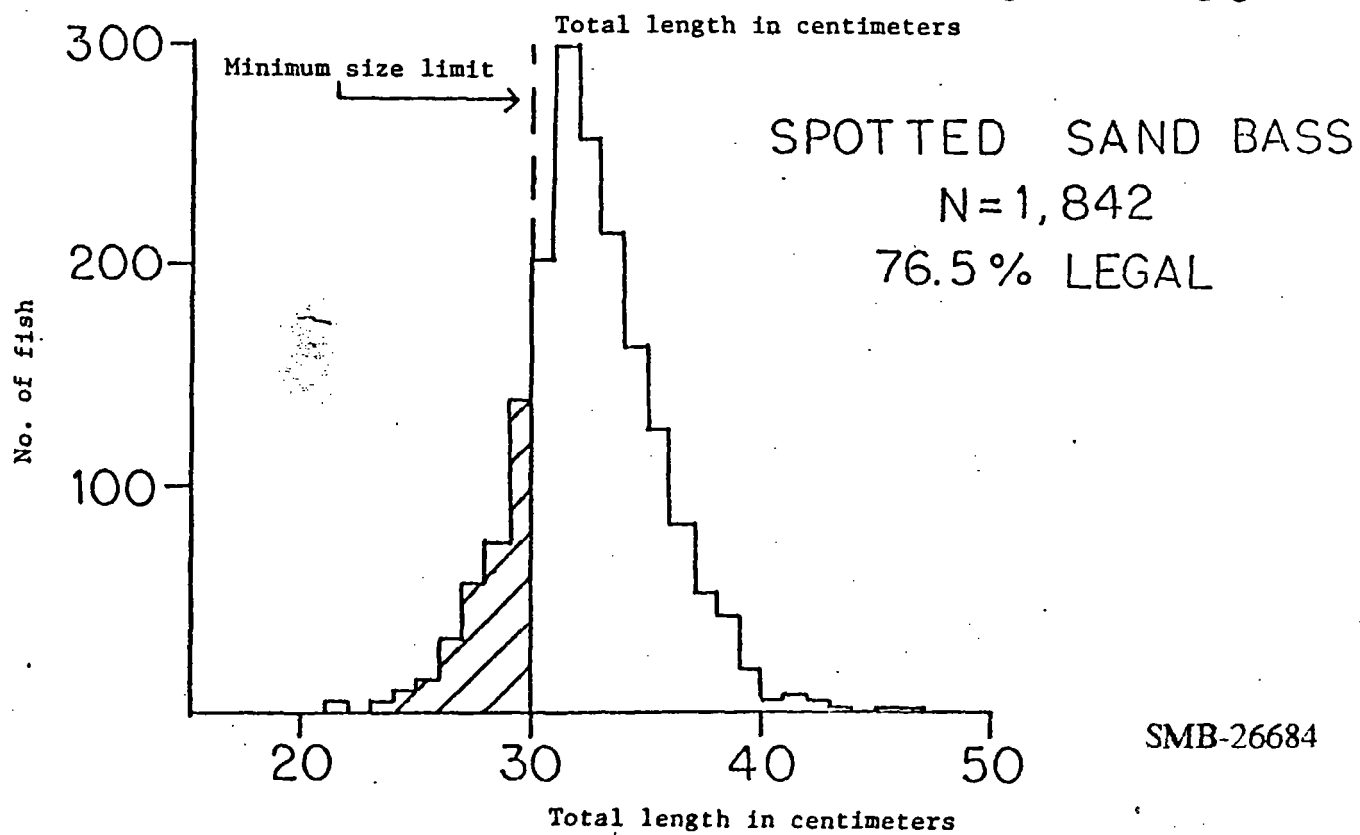
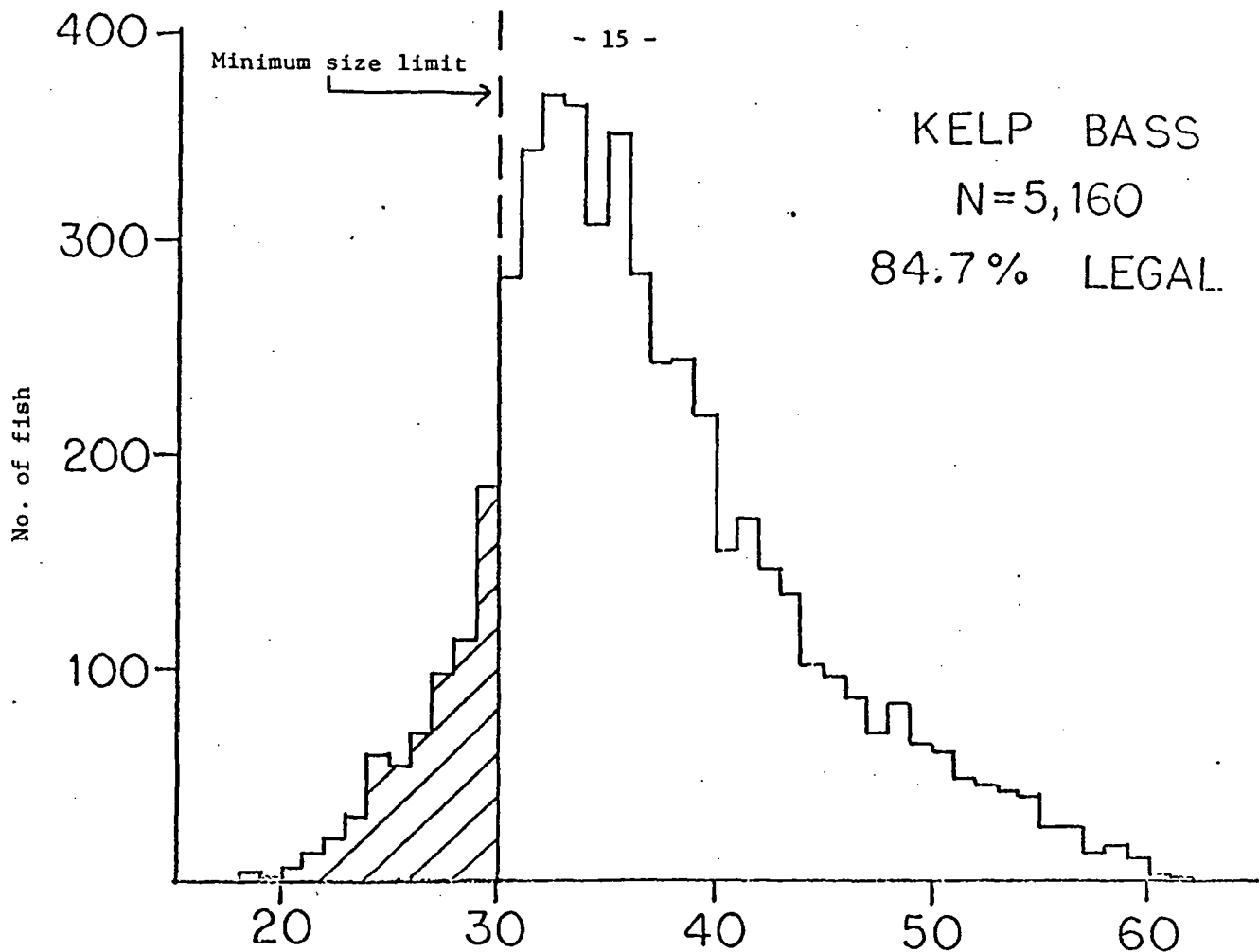


FIGURE 3. Estimated number of diver-days per month, July 1975 through June 1976.

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FIGURE 4. Length frequencies of kelp bass and spotted sand bass.

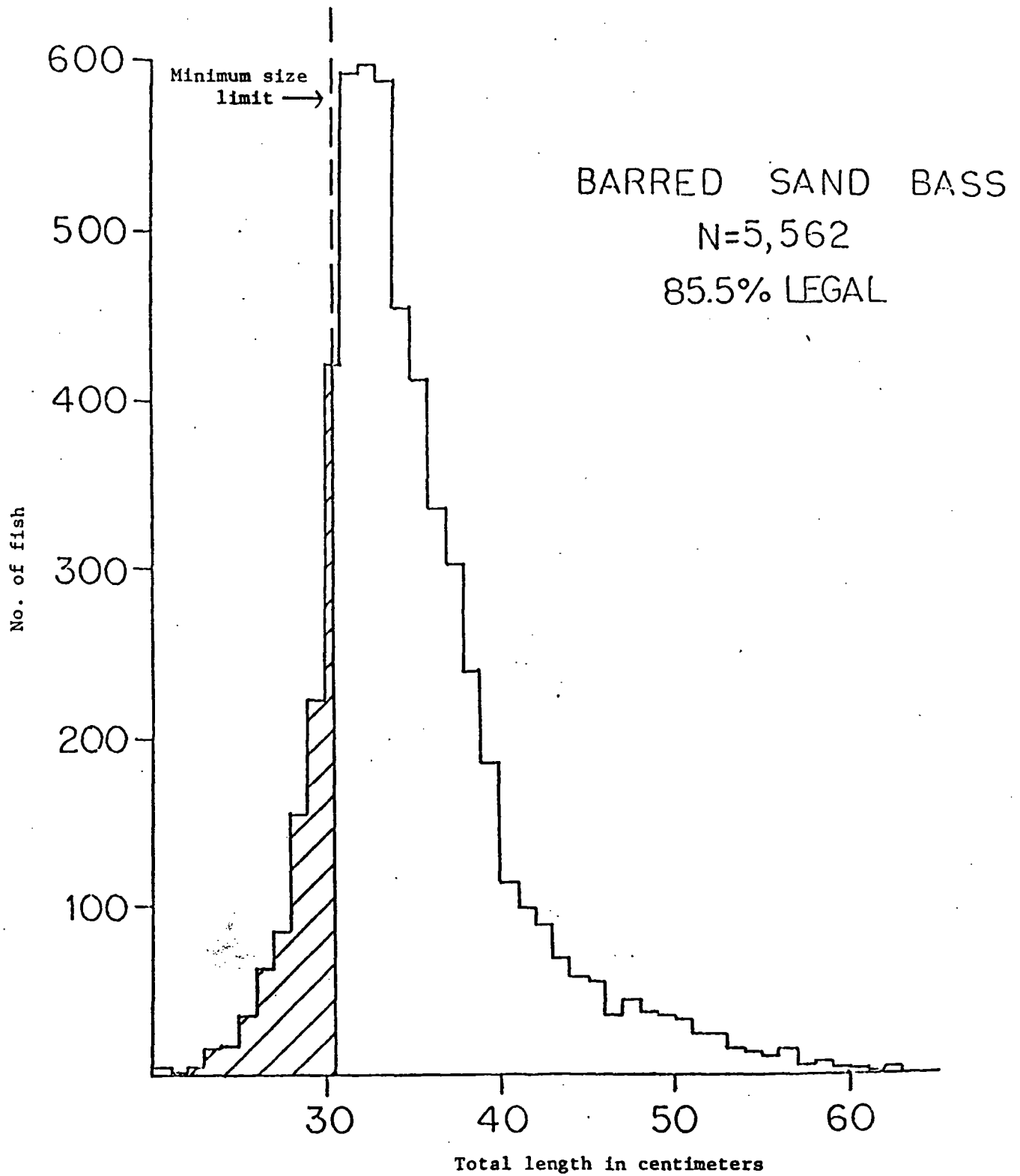


FIGURE 5. Length frequency of barred sand bass.

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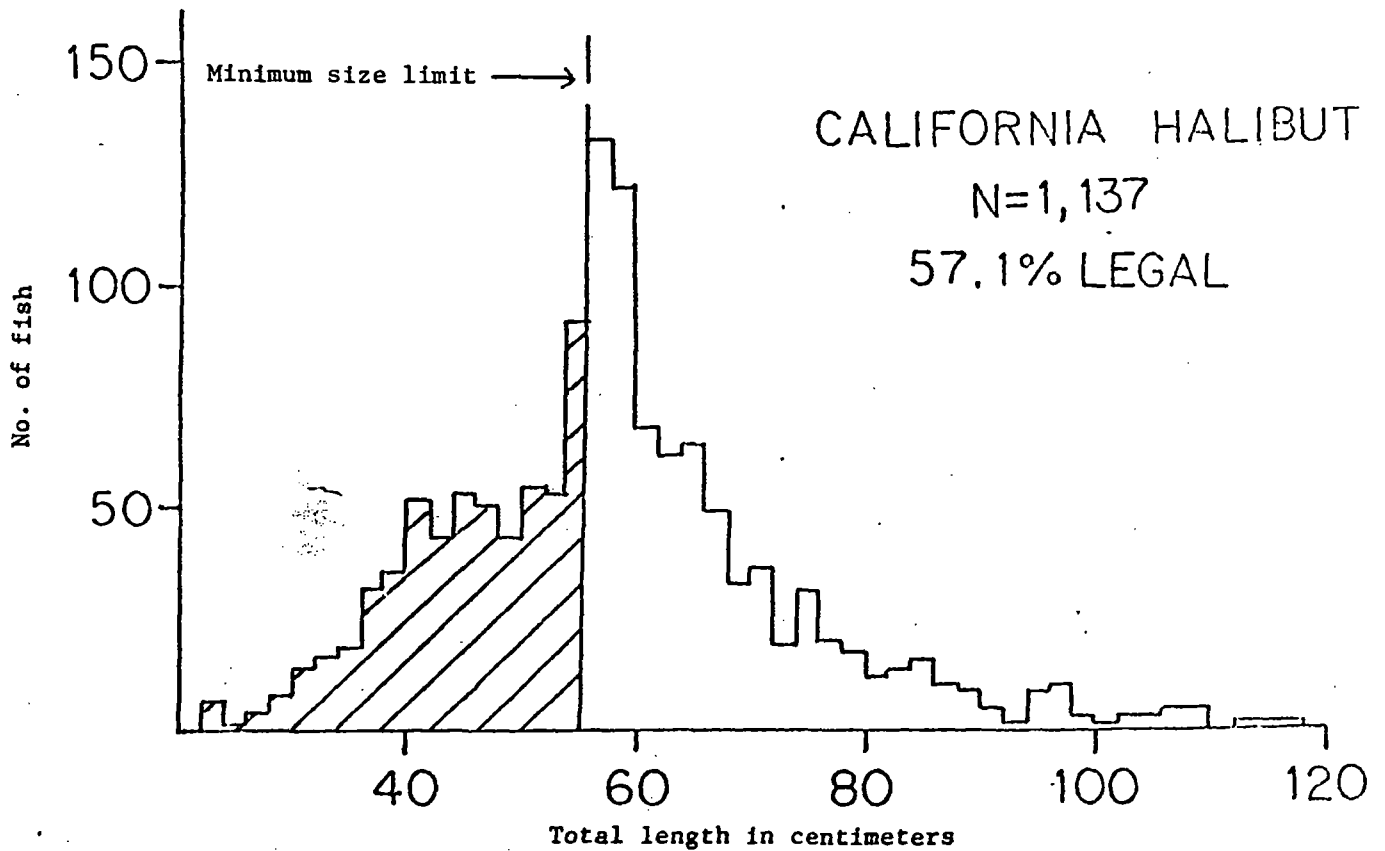
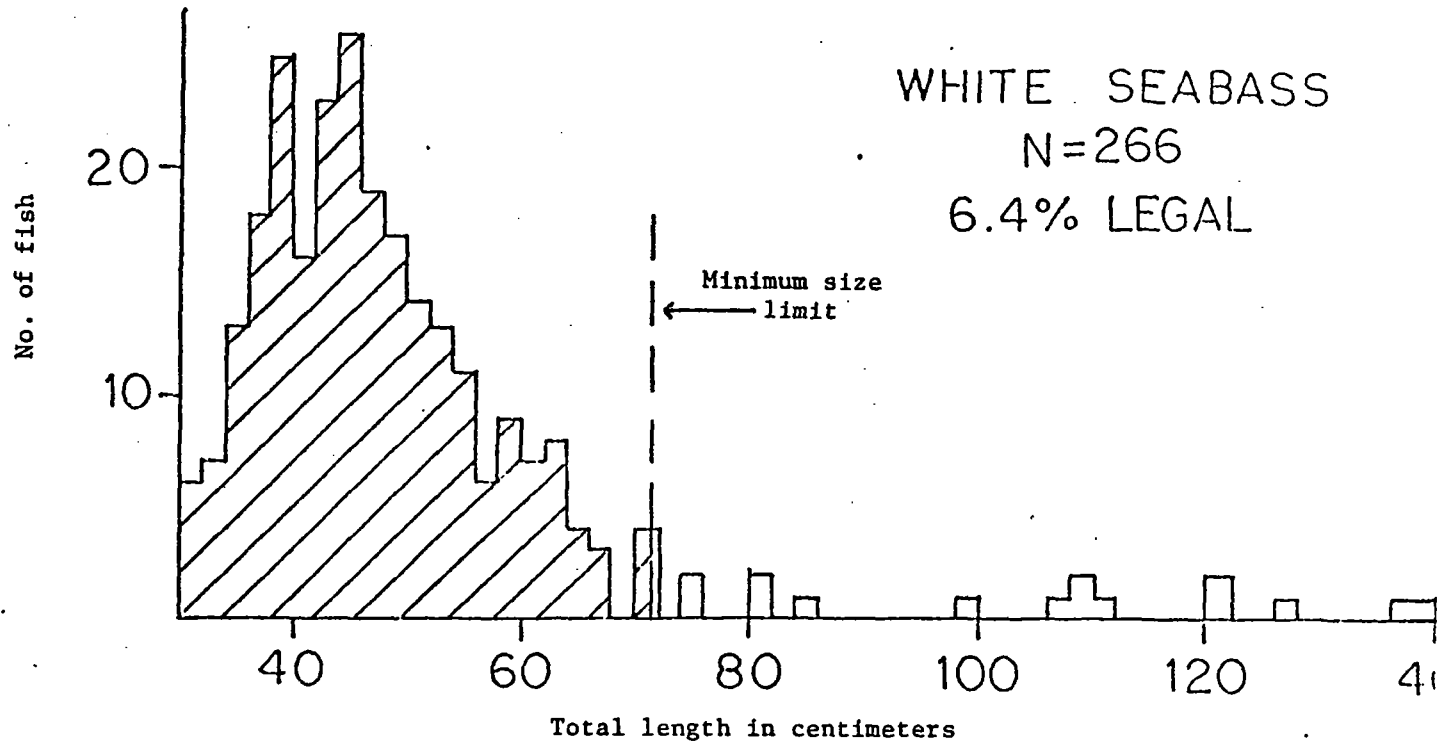


FIGURE 6. Length frequencies of white seabass and California halibut.

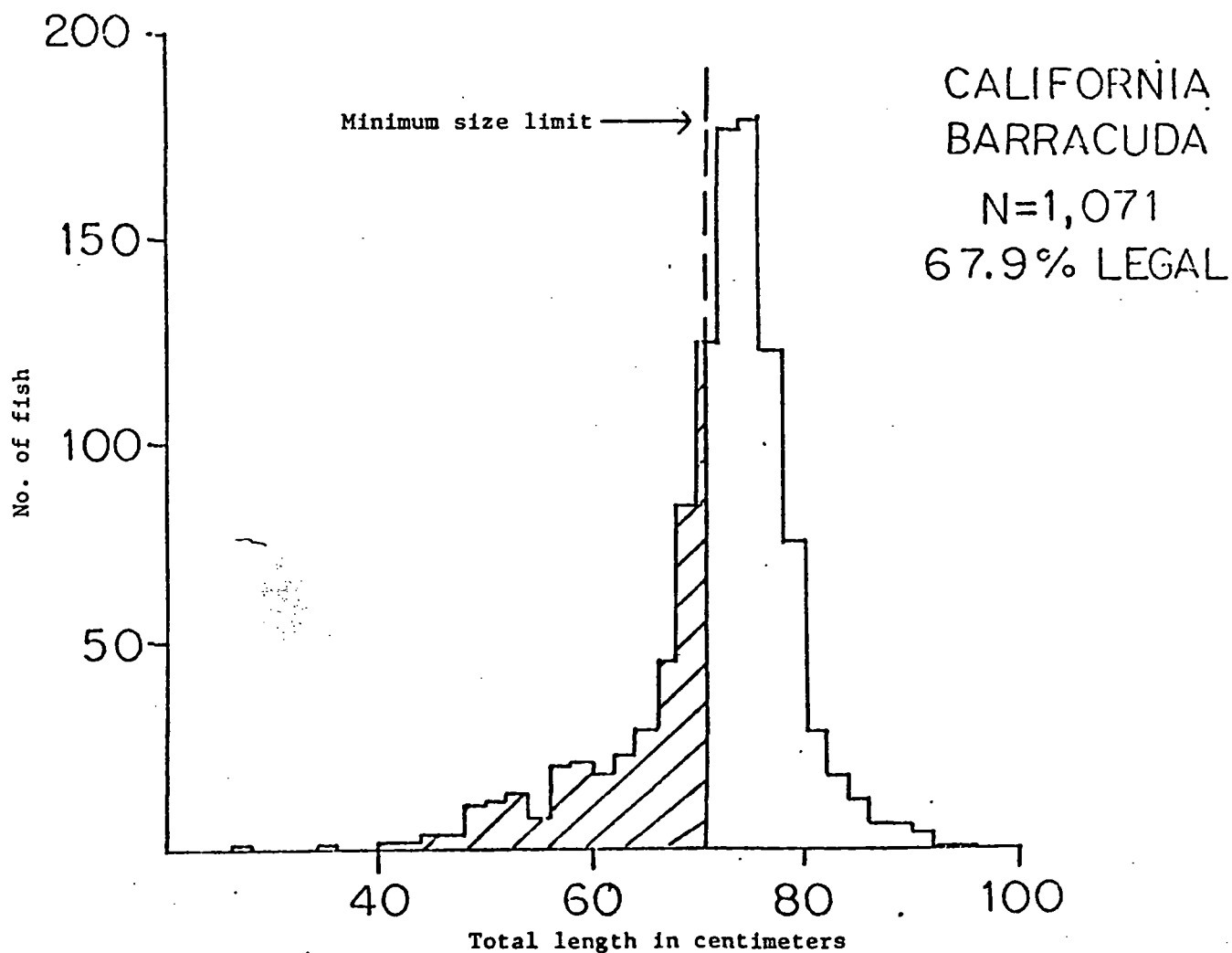
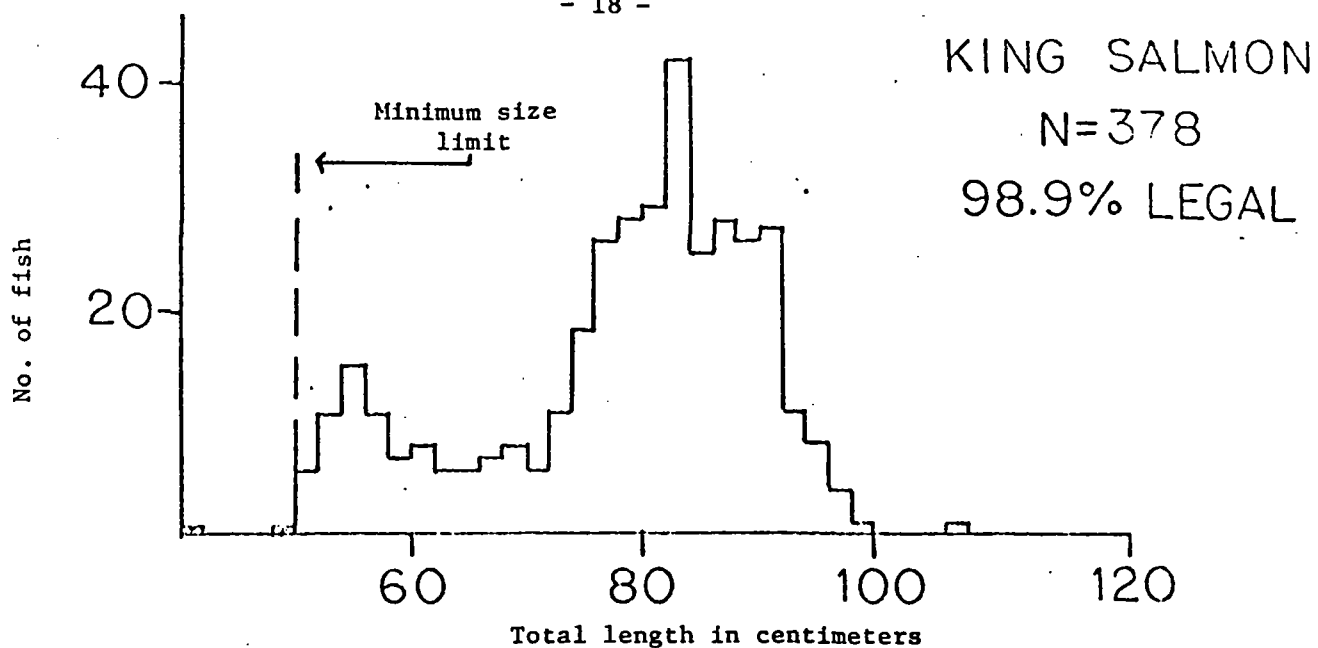


FIGURE 7. Length frequencies of king salmon and California barracuda.

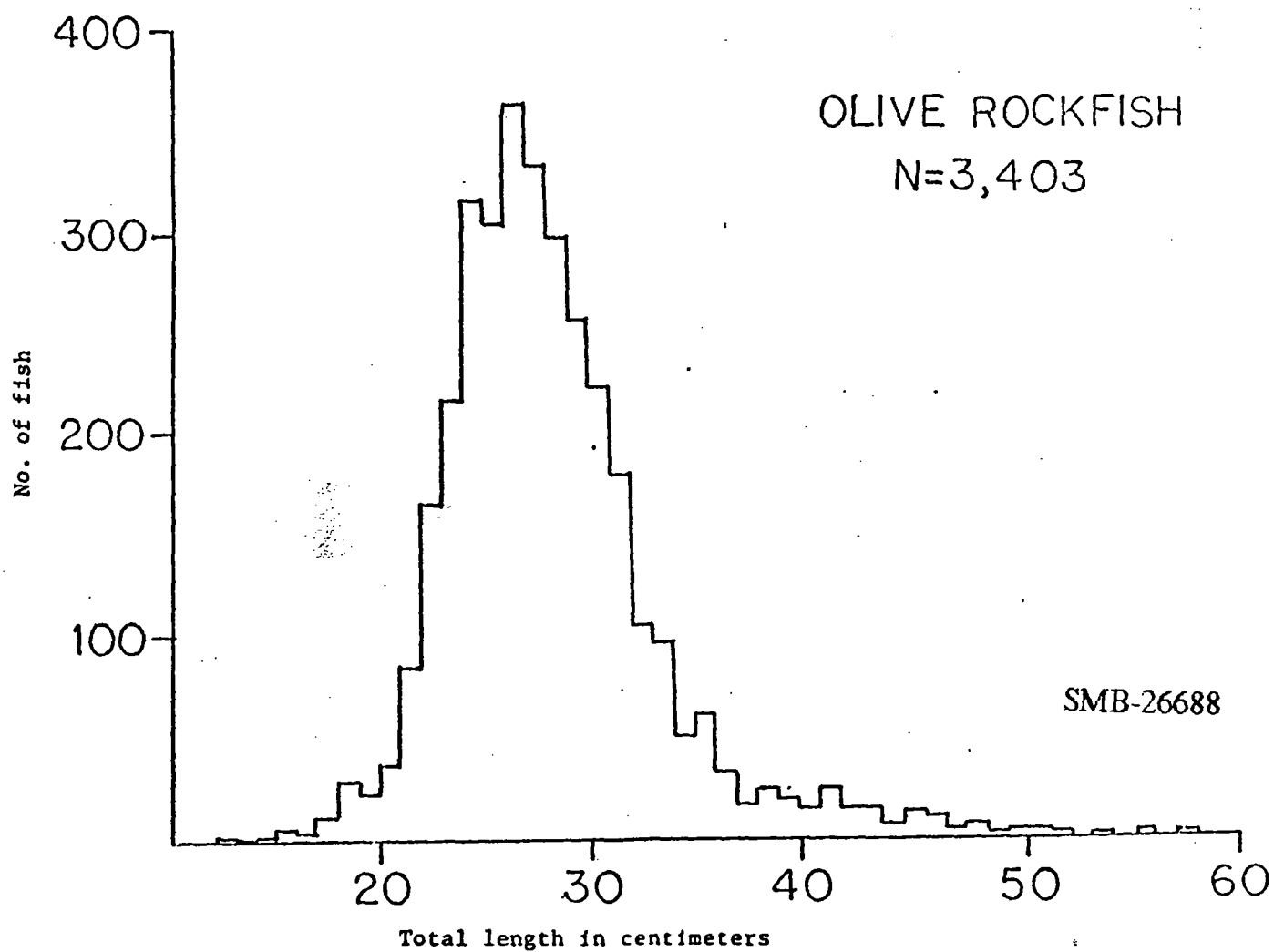
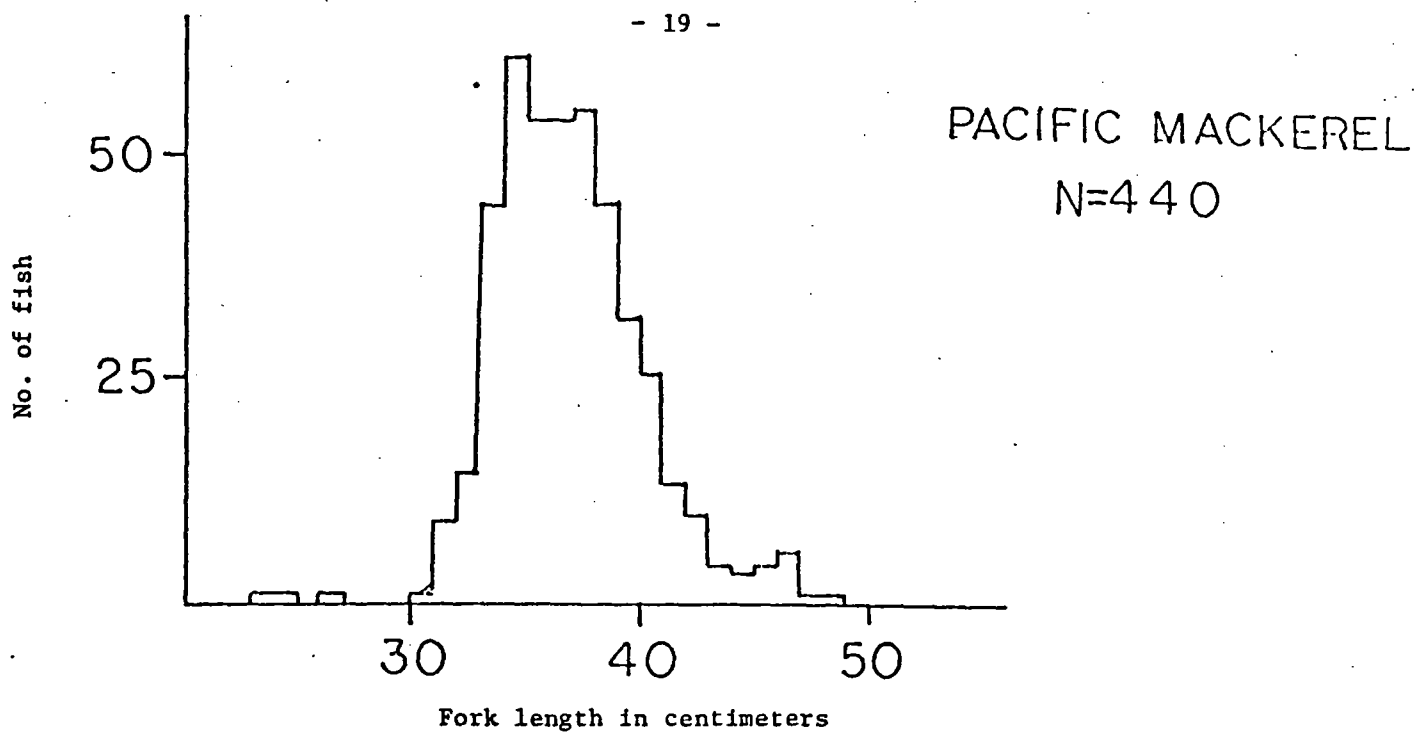


FIGURE 8. Length frequencies of Pacific mackerel and olive rockfish.

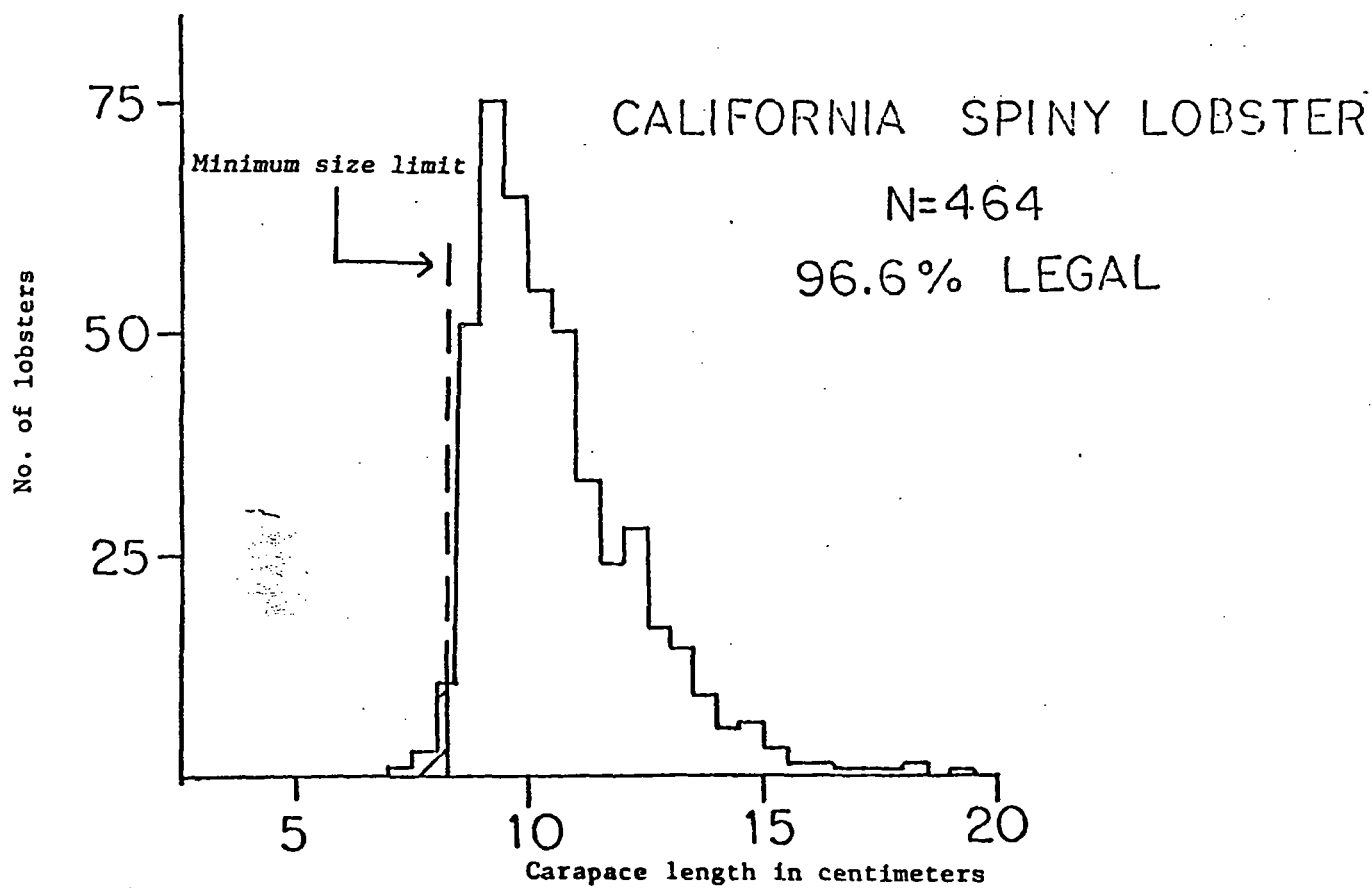
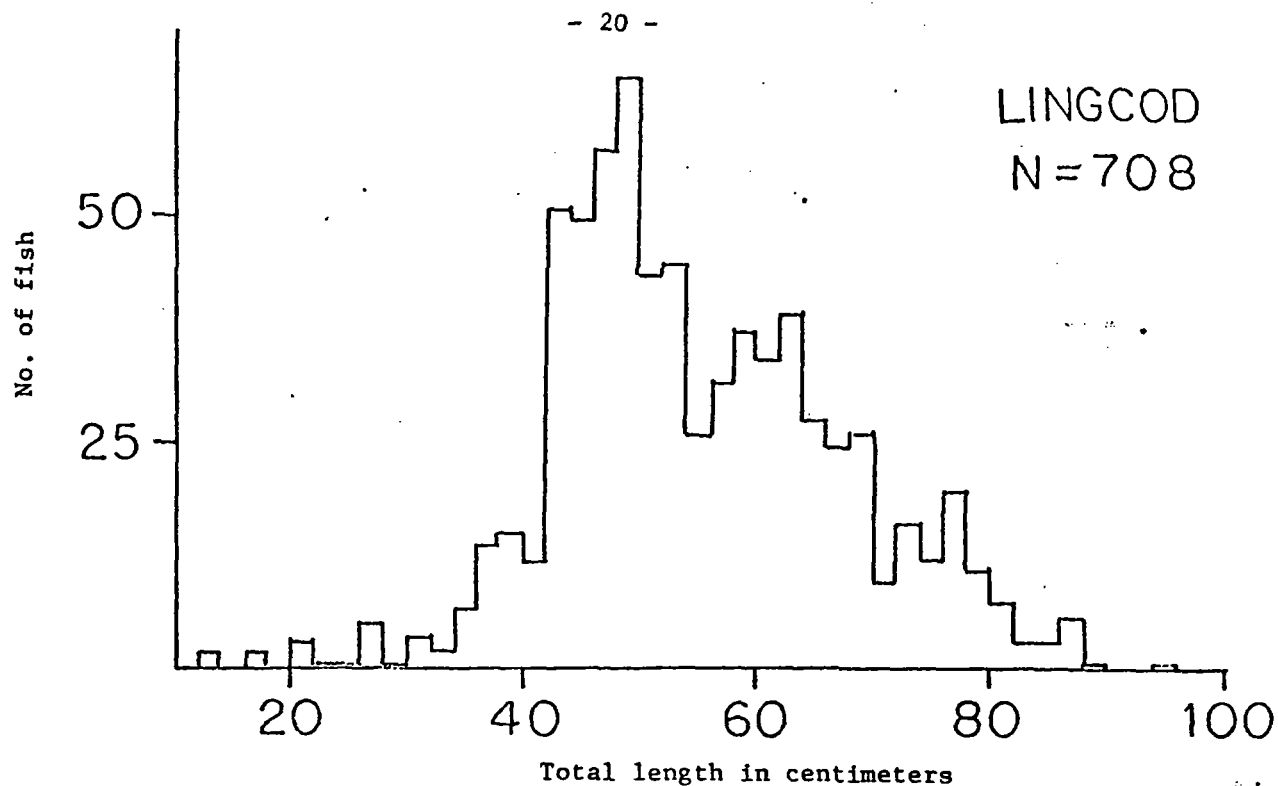
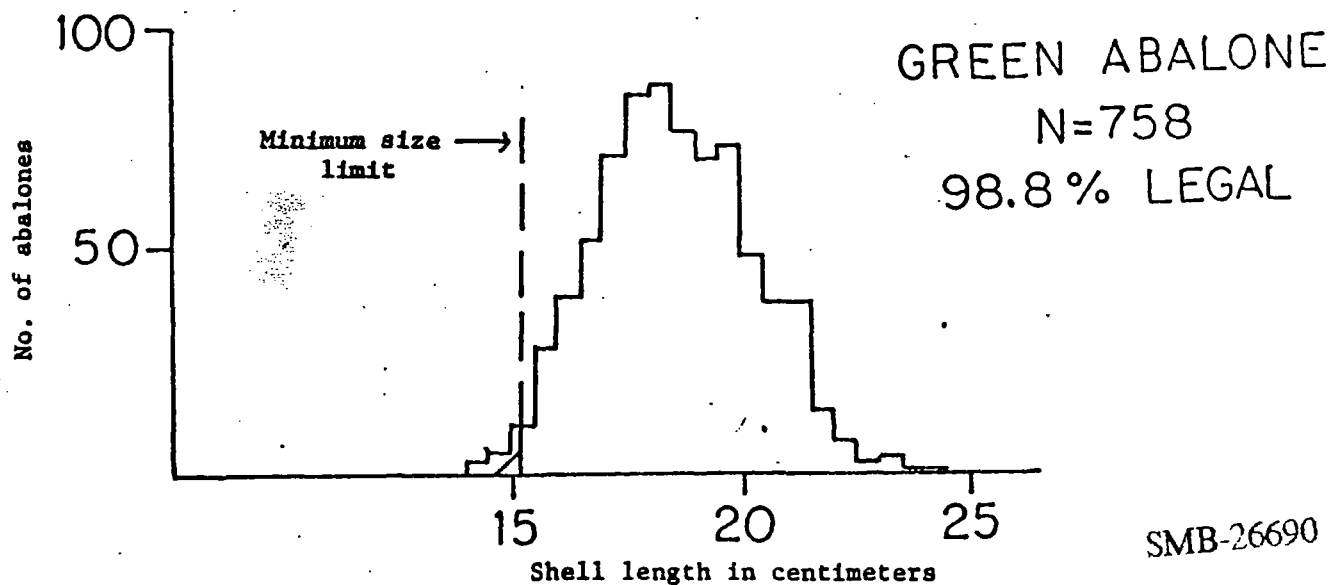
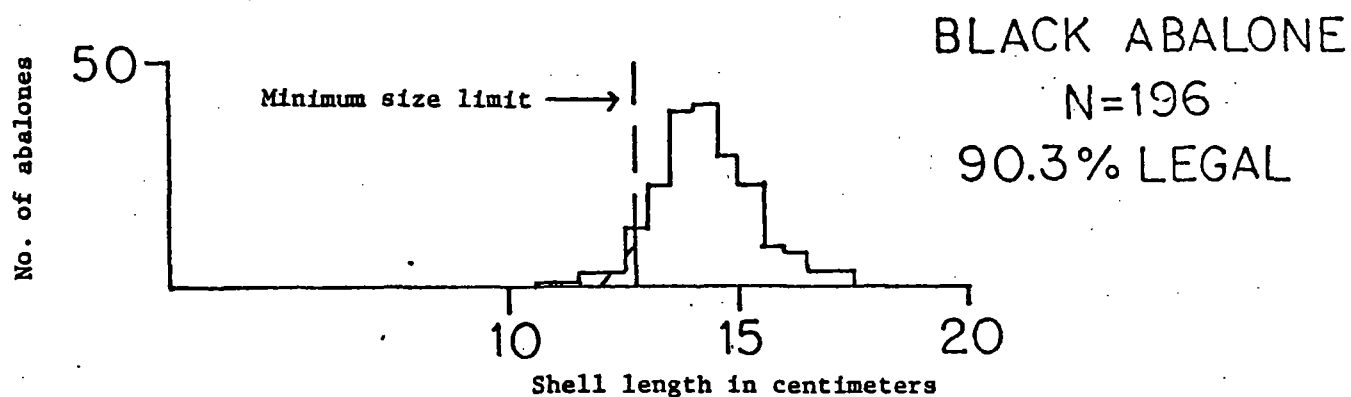
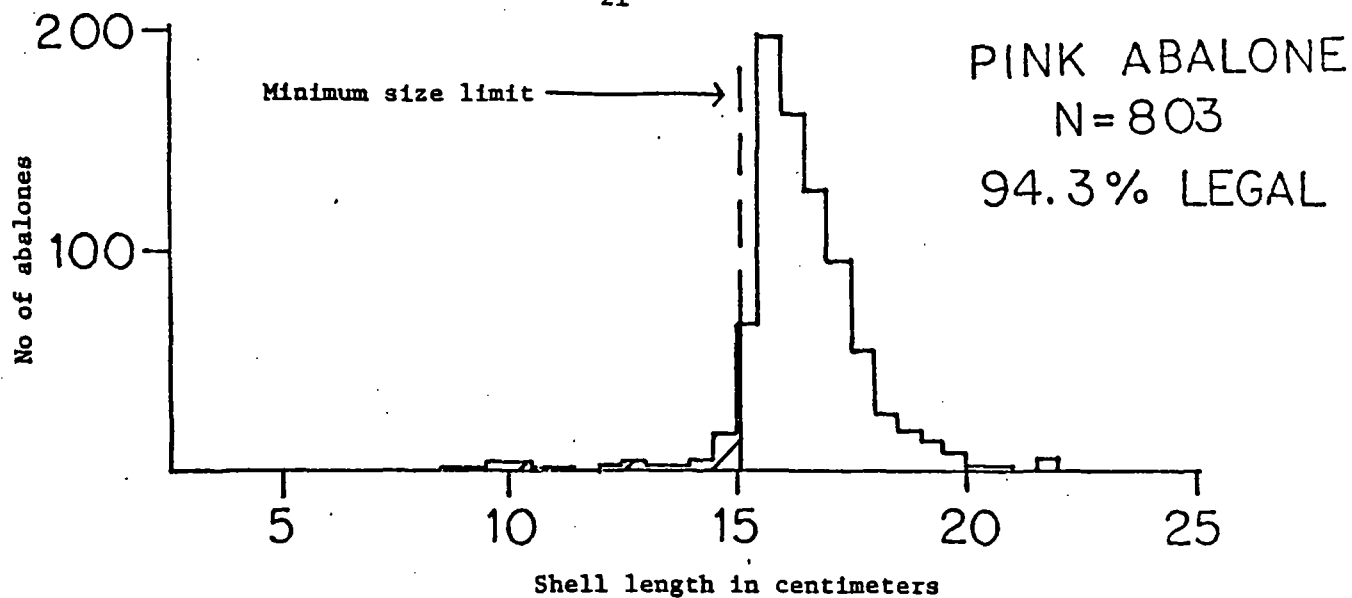


FIGURE 9. Length frequencies of lingcod and California spiny lobster.



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FIGURE 10. Length frequencies of pink, black, and green abalones.

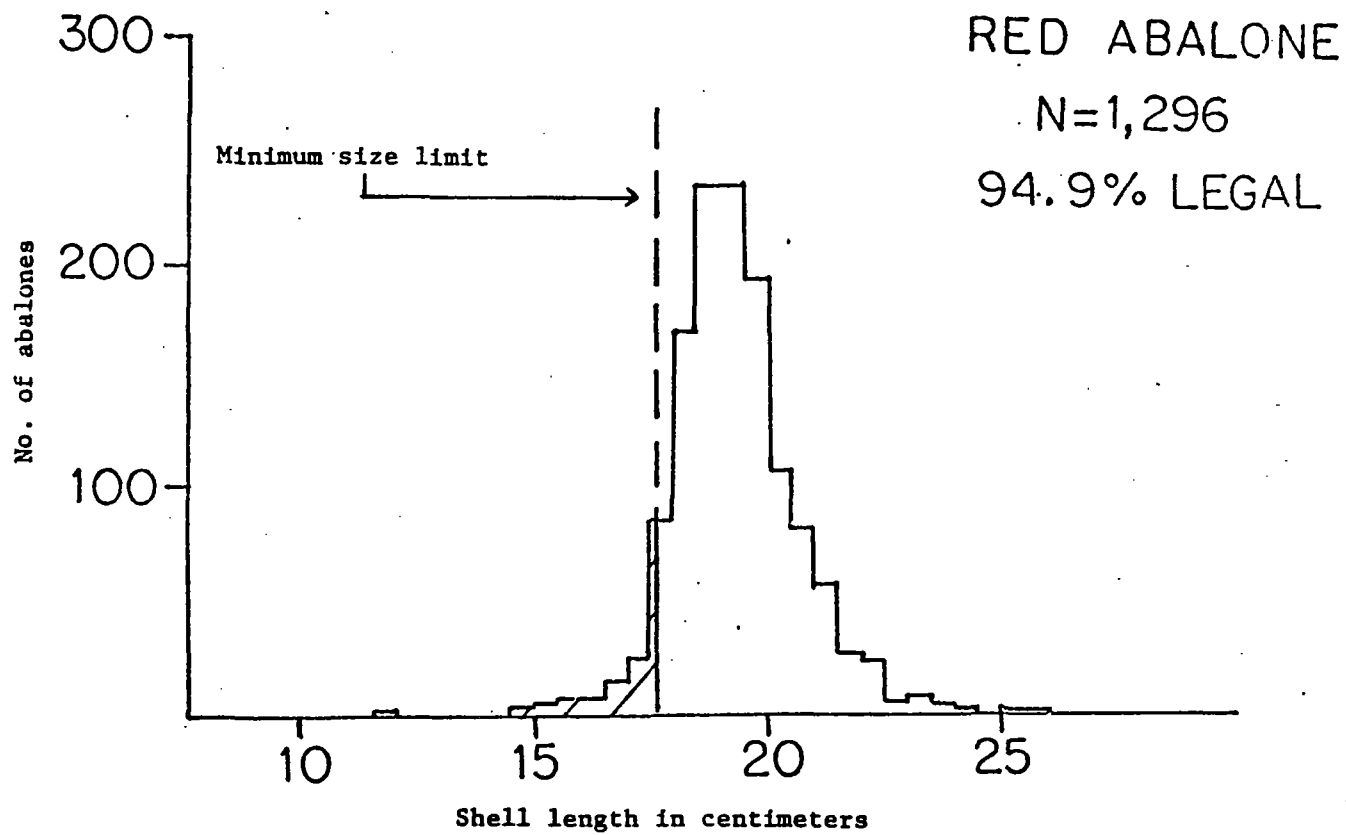


FIGURE 11. Length frequency of red abalone.

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TABLE 1. List of Species Sampled From Southern California Private Boats.

Scientific name	Common name	No. sampled
<u>Fishes</u>		
<i>Alopias vulpinus</i>	thresher shark	31
<i>Amphistichus argenteus</i>	barred surfperch	164
<i>A. koelzi</i>	calico surfperch	5
<i>Anisotremus davidsonii</i>	sargo	100
<i>Anoplopoma fimbria</i>	sablefish	3,554
<i>Atherinops affinis</i>	topsmelt	106
<i>Atherinopsis californiensis</i>	jacksmelt	324
<i>Atractoscion nobilis</i>	white seabass	322
<i>Caulolatilus princeps</i>	ocean whitefish	1,814
<i>Cephaloscyllium ventriosum</i>	swell shark	9
<i>Cheilotrema saturnum</i>	black croaker	155
<i>Chromis punctipinis</i>	blacksmith	43
<i>Citharichthys sordidus</i>	Pacific sanddab	1,800
<i>C. stigmaeus</i>	speckled sanddab	175
<i>C. xanthostigma</i>	longfin sanddab	9
<i>Cymatogaster aggregata</i>	shiner surfperch	122
<i>Damalichthys vacca</i>	pile surfperch	198
<i>Dasyatis dypterygia</i>	diamond stingray	1
<i>Decapterus hypodus</i>	mexican scad	32
<i>Echinorhinus cookei</i>	prickly shark	1
<i>Embassichthys bathybius</i>	deepsea sole	2
<i>Embiotoca jacksoni</i>	black surfperch	3,550
<i>E. lateralis</i>	striped surfperch	59
<i>Eopsetta jordani</i>	petrale sole	89
<i>Eptatretus stoutii</i>	Pacific hagfish	1
<i>Euthyrnus pelamis</i>	skipjack	3
<i>Galeorhinus zyopterus</i>	soupfin shark	31
<i>Genyonemus lineatus</i>	white croaker	39,152
<i>Girella nigricans</i>	opaleye	462
<i>Glyptocephalus zachirus</i>	rex sole	5
<i>Gymnothorax mordax</i>	California moray	3
<i>Halichoeres semicinctus</i>	rock wrasse	108
<i>Heterodontus francisci</i>	horn shark	1
<i>Herostichus rostratus</i>	giant kelpfish	313
<i>Hippoglossina stomata</i>	bigmouth sole	112
<i>Hexagrammos decagrammus</i>	kelp greenling	8
<i>Hydrolagus collieri</i>	ratfish	14
<i>Hyperprosopon anale</i>	spotfin surfperch	1
<i>H. argenteum</i>	walleye surfperch	569
<i>H. ellipticum</i>	silver surfperch	5
<i>Hypsopsetta guttulata</i>	diamond turbot	112
<i>Hypsirus caryi</i>	rainbow surfperch	133
<i>Hypsipops rubicundus</i>	garibaldi	5
<i>Istius oxyrinchus</i>	bonito shark	4
<i>Lepidopsetta bilineata</i>	rock sole	11
<i>Leptocottus armatus</i>	staghorn sculpin	5
<i>Medialuna californiensis</i>	halfmoon	1,722
<i>Menticirrhus undulatus</i>	California corbina	30
<i>Merluccius productus</i>	Pacific hake	154

Scientific name	Common name	No. sampled
<i>Mola mola</i>	common mola	17
<i>Mugil cephalus</i>	striped mullet	3
<i>Mustelus californicus</i>	gray smoothhound	102
<i>M. henlei</i>	brown smoothhound	115
<i>Myliobatis californica</i>	bat ray	30
<i>Neoclinus blanchardi</i>	sarcastic fringehead	4
<i>N. stephensae</i>	yellowfin fringehead	1
<i>N. uninotatus</i>	onespot fringehead	10
<i>Oncorhynchus kisutch</i>	silver salmon	6
<i>O. tshawytscha</i>	king salmon	381
<i>Ophiodon elongatus</i>	lingcod	953
<i>Oxyjulis californica</i>	senorita	193
<i>Paralabrax clathratus</i>	kelp bass	6,231
<i>P. maculatofasciatus</i>	spotted sand bass	2,082
<i>P. nebulifer</i>	barred sand bass	6,969
<i>Paralichthys californicus</i>	California halibut	1,595
<i>Parophrys vetulus</i>	English sole	3
<i>Peprilus simillimus</i>	Pacific butterflyfish	2
<i>Phanerodon furcatus</i>	white surfperch	688
<i>Platichthys stellatus</i>	starry flounder	11
<i>Platyrrhinoidis triseriata</i>	thornback	7
<i>Pleuronichthys coenosus</i>	C O turbot	3
<i>P. ritteri</i>	spotted turbot	5
<i>P. verticalis</i>	hornyhead turbot	3
<i>Porichthys myriaster</i>	specklefin midshipman	10
<i>P. notatus</i>	plainfin midshipman	7
<i>Poromitra crassiceps</i>	crested bigscale	1
<i>Prionace glauca</i>	blue shark	439
<i>Psettichthys melanostictus</i>	sand sole	2
<i>Rhacochilus toxotes</i>	rubberlip surfperch	312
<i>Rhinobatos productus</i>	shovelnose guitarfish	89
<i>Roccus saxatilis</i>	striped bass	16
<i>Roncador stearnsii</i>	spotfin croaker	199
<i>Sarda chiliensis</i>	Pacific bonito	10,621
<i>Scomber japonicus</i>	Pacific mackerel	6,083
<i>Scorpaena guttata</i>	sculpin	2,451
<i>Scorpaenichthys marmoratus</i>	cabezon	797
<i>Sebastes alutus</i>	Pacific ocean perch	13
<i>S. atrovirens</i>	kelp rockfish	1,233
<i>S. auriculatus</i>	brown rockfish	2,023
<i>S. aurora</i>	aurora rockfish	15
<i>S. carnatus</i>	gopher rockfish	352
<i>S. caurinus</i>	copper rockfish	3,479
<i>S. chlorostictus</i>	greenspotted rockfish	2,883
<i>S. chrysomelas</i>	black & yellow rockfish	155
<i>S. constellatus</i>	starry rockfish	1,241
<i>S. dallii</i>	calico rockfish	197
<i>S. diploproa</i>	splitnose rockfish	11
<i>S. elongatus</i>	greenstriped rockfish	974
<i>S. ensifer</i>	swordspine rockfish	52
<i>S. entomelas</i>	widow rockfish	868
<i>S. eos</i>	pink rockfish	225
<i>S. flavidus</i>	yellowtail rockfish	296

Scientific name	Common name	No. sampled.
<i>Sebastes gilli</i>	bronzespotted rockfish	36
<i>S. goodei</i>	chilipepper	1,750
<i>S. helvomaculatus</i>	rosethorn rockfish	9
<i>S. hopkinsi</i>	squarespot rockfish	101
<i>S. lentiginosus</i>	freckled rockfish	2
<i>S. levis</i>	cowcod	180
<i>S. macdonaldi</i>	mexican rockfish	141
<i>S. maliger</i>	quillback rockfish	1
<i>S. melanops</i>	black rockfish	27
<i>S. melanostomus</i>	blackgill rockfish	50
<i>S. miniatus</i>	vermillion rockfish	3,446
<i>S. mystinus</i>	blue rockfish	3,774
<i>S. nebulosus</i>	china rockfish	1
<i>S. ovalis</i>	speckled rockfish	61
<i>S. paucispinis</i>	bocaccio	6,984
<i>S. phillipsi</i>	chameleon rockfish	5
<i>S. pinniger</i>	canary rockfish	207
<i>S. rastrelliger</i>	grass rockfish	1,618
<i>S. rosaceus</i>	rosy rockfish	1,238
<i>S. rosenblatti</i>	greenblotched rockfish	995
<i>S. ruberrimus</i>	yelloweye rockfish	14
<i>S. rubrivinctus</i>	flag rockfish	788
<i>S. rufus</i>	bank rockfish	59
<i>S. saxicola</i>	stripetail rockfish	12
<i>S. semicinctus</i>	halfbanded rockfish	21
<i>S. simulator</i>	pinkrose rockfish	12
<i>S. serranoides</i>	olive rockfish	4,682
<i>S. serripes</i>	treefish	314
<i>S. umbrosus</i>	honeycomb rockfish	730
<i>S. zacentrus</i>	sharpchin rockfish	3
<i>Sebastolobus alascanus</i>	shortspine thornyhead	10
<i>Semicossyphus pulcher</i>	California sheephead	1,202
<i>Seriola dorsalis</i>	yellowtail	85
<i>Seriphus politus</i>	queenfish	1,143
<i>Sphyræna argentea</i>	California barracuda	1,315
<i>Squalus acanthias</i>	spiny dogfish	330
<i>Squatina californica</i>	angel shark	5
<i>Stereolepis gigas</i>	giant seabass	14
<i>Strongylura exilis</i>	California needlefish	7
<i>Synodus lucioceps</i>	California lizardfish	1,165
<i>Tetrapturus audax</i>	striped marlin	6
<i>Thunnus alalunga</i>	albacore	361
<i>T. thynnus</i>	bluefin tuna	42
<i>Torpedo californica</i>	Pacific electric ray	1
<i>Trachurus symmetricus</i>	jack mackerel	282
<i>Triakis semifasciata</i>	leopard shark	4
<i>Umbrina roncadore</i>	yellowfin croaker	98
<i>Urolophus halleri</i>	round stingray	5
<i>Xenistius californiensis</i>	salema	1
<i>Xystreurys liolepis</i>	fantail sole	10
<i>Zaniolepis frenata</i>	shortspine combfish	1

TABLE 1 cont.

- 26 -

Scientific name	Common name	No. sampled
<i>Sebastes</i> spp.	unidentified filleted rockfish	2,814
---	unidentified blenny	3
---	unidentified filleted fish	163

Molluscs and Crustaceans

<i>Astraea undosa</i>	wavy top	2
<i>Cancer anthonyi</i>	yellow crab	9
<i>C. antennarius</i>	rock crab	545
<i>C. productus</i>	red crab	15
<i>Clinocardium nuttali</i>	basket cockle	150
<i>Cypraea spadicea</i>	chestnut cowry	73
<i>Haliotis corrugata</i>	pink abalone	818
<i>H. cracherodii</i>	black abalone	229
<i>H. fulgens</i>	green abalone	966
<i>H. rufescens</i>	red abalone	1,488
<i>H. sorenseni</i>	white abalone	71
<i>Himantes multirugosus</i>	rock scallop	2,590
<i>Kelletia kelletii</i>	Kellet's whelk	39
<i>Loxorhynchus grandis</i>	sheep crab	14
<i>Octopus bimaculatus</i>	twospot octopus	10
<i>Panulirus interruptus</i>	California spiny lobster	728
<i>Pugettia gracilis</i>	graceful kelp crab	2
<i>Tivela stultorum</i>	pismo clam	93
<i>Polinices</i> spp.	moon snail	3
Spider crab	unclassified spider crab	14

Echinoderms

<i>Strongylocentrotus franciscanus</i>	red urchin	1
<i>S. purpuratus</i>	purple urchin	20
<i>Pisaster</i> spp.	sea star	1

SMB-26695

TABLE 2. Most Commonly Landed Species

Scientific name	Common name	No. sampled
<u>Fishes</u>		
<i>Genyonemus lineatus</i>	white croaker	39,152
<i>Sarda chiliensis</i>	Pacific bonito	10,621
<i>Sebastes paucispinis</i>	bocaccio	6,984
<i>Paralabrax nebulifer</i>	barred sand bass	6,969
<i>P. clathratus</i>	kelp bass	6,231
<i>Scomber japonicus</i>	Pacific mackerel	6,083
<i>Sebastes serranoides</i>	olive rockfish	4,682
<i>S. mystinus</i>	blue rockfish	3,774
<i>Anoplopoma fimbria</i>	sablefish	3,554
<i>Embiotoca jacksoni</i>	black surfperch	3,550
<i>Sebastes caurinus</i>	copper rockfish	3,479
<i>S. miniatus</i>	vermillion rockfish	3,446
<i>S. chlorostictus</i>	greenspotted rockfish	2,883
<i>Scorpaena guttata</i>	sculpin	2,451
<i>Paralabrax maculatofasciatus</i>	spotted sand bass	2,082
<i>Sebastes muriculatus</i>	brown rockfish	2,023
<i>Caulolatilus princeps</i>	ocean whitefish	1,814
<i>Citharichthys sordidus</i>	Pacific sanddab	1,800
<i>Sebastes goodei</i>	chilipepper	1,750
<i>Medialuna californiensis</i>	halfmoon	1,722
<i>Sebastes rastrelliger</i>	grass rockfish	1,618
<i>Paralichthys californicus</i>	California halibut	1,595
<i>Sphyræna argentea</i>	California barracuda	1,315
<i>Sebastes constellatus</i>	starry rockfish	1,241
<i>S. rosaceus</i>	rosy rockfish	1,238
<i>S. atrovirens</i>	kelp rockfish	1,233
<i>Semicossyphus pulcher</i>	California sheephead	1,202
<i>Synodus lucioceps</i>	California lizardfish	1,165
<i>Seriphus politus</i>	queenfish	1,143
<i>Sebastes rosenblatti</i>	greenblotched rockfish	995
<i>S. elongatus</i>	greenstriped rockfish	974
<i>Ophiodon elongatus</i>	lingcod	953
<i>Sebastes entomelas</i>	widow rockfish	868
<i>Scorpaenichthys marmoratus</i>	cabezon	797
<i>Sebastes rubrivinctus</i>	flag rockfish	788
<i>S. umbrosus</i>	honeycomb rockfish	730
<i>Phanerodon furcatus</i>	white surfperch	688
<i>Hyperprosopon argenteum</i>	walleye surfperch	569
<u>Molluscs and Crustaceans</u>		
<i>Hinnites multirugosus</i>	rock scallop	2,590
<i>Haliotis rufescens</i>	red abalone	1,488
<i>H. fulgens</i>	green abalone	966
<i>H. corrugata</i>	pink abalone	818
<i>Parulirus interruptus</i>	California spiny lobster	728
<i>Cancer antennarius</i>	rock crab	545

The above species constitute 93% of the identified catch. The remaining 7% is composed of 10,021 organisms of 133 species.

SMB-26696

TABLE 3. Catch and Effort Estimates for Anglers and Divers.

	Santa Barbara/ Ventura Counties	Los Angeles County	Orange County	San Diego County	Total
Angler Parties					
weekend	11,536	27,666	21,744	16,685	77,631
weekday	<u>6,240</u>	<u>14,474</u>	<u>7,022</u>	<u>12,525</u>	<u>40,261</u>
total	17,776	42,140	28,766	29,210	117,892
Diver Parties					
weekend	1,122	748	1,115	1,282	4,267
weekday	<u>633</u>	<u>530</u>	<u>223</u>	<u>687</u>	<u>2,073</u>
total	1,755	1,278	1,338	1,969	6,340
Angler Days					
weekend	33,178	79,552	59,519	45,567	217,816
weekday	<u>14,823</u>	<u>36,632</u>	<u>16,938</u>	<u>29,192</u>	<u>97,585</u>
total	48,001	116,184	76,457	74,759	315,401
Diver Days					
weekend	3,110	1,776	2,803	3,598	11,287
weekday	<u>1,844</u>	<u>1,166</u>	<u>482</u>	<u>1,766</u>	<u>5,258</u>
total	4,954	2,942	3,285	5,364	16,545
Angler-Trip-Hours					
weekend	212,353	501,230	396,735	320,397	1,430,715
weekday	<u>89,287</u>	<u>229,355</u>	<u>103,431</u>	<u>214,364</u>	<u>636,437</u>
total	301,640	730,585	500,166	534,761	2,067,152
Diver-Trip-Hours					
weekend	21,049	9,799	14,269	14,720	59,837
weekday	<u>11,505</u>	<u>5,036</u>	<u>1,826</u>	<u>8,728</u>	<u>27,095</u>
total	32,554	14,835	16,095	23,448	86,932
Total Fishes Landed					
weekend	134,586	260,229	105,782	112,889	613,486
weekday	<u>57,744</u>	<u>162,670</u>	<u>31,107</u>	<u>79,150</u>	<u>330,671</u>
total	192,330	422,899	136,889	192,039	944,157
No. Rockfishes Landed					
weekend	77,672	71,071	19,552	29,663	197,958
weekday	<u>31,325</u>	<u>30,770</u>	<u>3,235</u>	<u>12,093</u>	<u>77,423</u>
total	108,997	101,841	22,787	41,756	275,381

SMB-26697

TABLE 3 cont.

- 29 -

	Santa Barbara/ Ventura Counties	Los Angeles County	Orange County	San Diego County	Total
<i>Anoplopoma fimbria</i> (sablefish)	1,383	11,506	2,993	1,063	16,945
<i>Atractoscion nobilis</i> (white seabass)	31	457	892	505	1,885
<i>Caulolatilus princeps</i> (ocean whitefish)	1,056	5,368	552	3,301	10,277
<i>Citharichthys sordidus</i> (Pacific sanddab)	4,585	2,619	822	1,694	9,720
<i>Embiotoca jacksoni</i> (black surfperch)	710	17,364	4,583	969	23,626
<i>Genyonemus lineatus</i> (white croaker)	26,980	143,879	31,429	35,374	237,662
<i>Girella nigricans</i> (opaleye)	254	1,236	311	626	2,427
<i>Haliotis corrugata</i> (pink abalone)	3,363	334	565	725	4,987
<i>H. cracherodii</i> (black abalone)	583	360	336	67	1,346
<i>H. fulgens</i> (green abalone)	153	706	1,091	4,383	6,333
<i>H. rufescens</i> (red abalone)	3,994	158	82	5,451	9,685
<i>Himmites multirugosus</i> (rock scallop)	REDACTED				ok
<i>Medialuna californiensis</i> (halfmoon)	218	6,688	718	1,320	8,944
<i>Oncorhynchus tshawytscha</i> (king salmon)	2,159	0	19	5	2,183
<i>Ophiodon elongatus</i> (lingcod)	3,825	765	154	621	5,365
<i>Panulirus interruptus</i> (Calif. spiny lobster)	4,069	1,796	126	713	6,704
<i>Paralabrax clathratus</i> (kelp bass)	7,271	12,269	10,273	8,045	37,858

SMB-26698

	Santa Barbara/ Ventura Counties	Los Angeles County	Orange County	San Diego County	Total
<i>P. maculatofasciatus</i> (spotted sand bass)	0	655	4,283	10,444	15,382
<i>P. nebulifer</i> (barred sand bass)	4,641	5,915	9,862	32,007	52,425
<i>Paralichthys californicus</i> (Calif. halibut)	1,305	4,846	1,624	2,442	10,217
<i>Sarda chiliensis</i> (Pacific bonito)	1,435	38,976	10,201	17,195	67,807
<i>Scomber japonicus</i> (Pacific mackerel)	176	23,667	4,809	4,276	35,928
<i>Scorpaena guttata</i> (sculpin)	1,384	9,668	2,963	2,655	16,670
<i>Sebastes atrovirens</i> (kelp rockfish)	6,120	1,369	105	953	8,547
<i>S. auriculatus</i> (brown rockfish)	5,388	6,530	327	1,008	13,253
<i>S. caurinus</i> (copper rockfish)	16,253	2,718	73	762	19,806
<i>S. chlorostictus</i> (greenspotted rockfish)	6,017	5,546	1,096	4,286	16,945
<i>S. goodei</i> (chilipepper)	1,594	4,027	3,062	1,684	10,367
<i>S. miniatus</i> (vermillion rockfish)	7,753	7,381	1,358	3,745	20,237
<i>S. mystinus</i> (blue rockfish)	13,463	6,426	690	916	21,495
<i>S. paucispinis</i> (bocaccio)	14,015	22,060	2,486	2,796	41,357
<i>S. serranoides</i> (olive rockfish)	5,936	14,548	2,016	4,960	27,460
<i>S. rastrelliger</i> (grass rockfish)	3,993	3,866	610	519	8,988

TABLE 3. cont.

- 31 -

	Santa Barbara/ Ventura Counties	Los Angeles County	Orange County	San Diego County	Total
<i>Semicossyphus pulcher</i> (Calif. sheephead)	2,465	1,241	1,246	1,867	6,819
<i>Sphyræna argentea</i> (Calif. barracuda)	46	596	6,388	1,500	8,530
<i>Trachurus symmetricus</i> (jack mackerel)	235	1,843	138	155	2,371

SMB-26700

TABLE 4. Standard Error of the Estimates

	Santa Barbara/ Ventura Counties	Los Angeles County	Orange County	San Diego County	Total
Angler Parties	1,222	1,601	1,891	1,681	3,234
Diver Parties	180	172	155	160	334
Angler Days	3,141	4,500	5,066	4,184	8,561
Diver Days	510	358	405	467	878
Angler-Trip-Hours	22,247	28,074	35,606	32,651	60,141
Diver-Trip-Hours	3,520	1,698	2,049	2,724	5,186
Total Fishes Landed	12,610	26,277	11,020	13,792	34,076
No. Rockfishes Landed	8,218	9,219	2,248	3,169	12,947
barred sand bass	129	618	1,205	4,160	4,377
black abalone	175	106	229	31	309
black surfperch	134	2,472	602	203	2,556
blue rockfish	1,891	832	255	177	2,089
bocaccio	1,453	2,741	400	584	3,182
brown rockfish	780	704	85	140	1,063
Calif. barracuda	37	127	1,904	243	1,924
Calif. halibut	236	536	216	264	678
Calif. sheephead	469	467	218	277	750
Calif. spiny lobster	1,522	739	91	197	1,706
chilipepper	295	890	669	370	1,210
copper rockfish	1,732	832	26	132	1,926
grass rockfish	442	471	118	112	666
green abalone	48	197	244	1,004	1,053
greenspotted rockfish	705	1,213	373	588	1,566
halfmoon	94	781	146	375	884
jack mackerel	122	519	49	39	537
kelp bass	887	1,560	1,921	924	2,787
kelp rockfish	1,657	223	37	161	1,680
king salmon	1,106	0	10	4	1,106
lingcod	423	130	37	87	453
ocean whitefish	178	790	110	519	968
olive rockfish	706	1,628	329	571	1,893
opaleye	84	177	71	224	306
Pacific bonito	449	7,974	3,304	2,541	9,009
Pacific mackerel	93	6,106	1,370	961	6,332
Pacific sanddab	677	544	190	637	1,094
pink abalone	648	94	141	145	685
red abalone	828	45	33	759	1,131
rock scallop					
sablefish	291	1,334	564	191	1,490
sculpin	321	1,682	415	300	1,787
spotted sand bass	0	93	590	1,389	1,512
vermillion rockfish	1,001	654	288	400	1,293
white croaker	3,498	17,619	3,622	5,499	19,132
white seabass	14	73	147	93	189

SMB-26701

TABLE 5. Most Commonly Landed Species in Each County.

County	Rank	Scientific name	Common name
Santa Barbara	1.	<i>Sebastes paucispinis</i>	bocaccio
	2.	<i>S. entomelas</i>	widow rockfish
	3.	<i>Genyonemus lineatus</i>	white croaker
	4.	<i>Sebastes mystinus</i>	blue rockfish
	5.	<i>S. caurinus</i>	copper rockfish
	6.	<i>S. atrovirens</i>	kelp rockfish
	7.	<i>S. serranoides</i>	olive rockfish
	8.	<i>Haliotis rufescens</i>	red abalone
	9.	<i>Paralabrax clathratus</i>	kelp bass
	10.	<i>Sebastes miniatus</i>	vermillion rockfish
	11.	<i>S. auriculatus</i>	brown rockfish
	12.	<i>Oncorhynchus tshawytscha</i>	king salmon
	13.	<i>Sebastes rastrelliger</i>	grass rockfish
	14.	<i>S. chlorostictus</i>	greenspotted rockfish
	15.	<i>Ophiodon elongatus</i>	lingcod
Ventura	1.	<i>Genyonemus lineatus</i>	white croaker
	2.	<i>Sebastes caurinus</i>	copper rockfish
	3.	<i>S. mystinus</i>	blue rockfish
	4.	<i>S. paucispinis</i>	bocaccio
	5.	<i>S. miniatus</i>	vermillion rockfish
	6.	<i>S. chlorostictus</i>	greenspotted rockfish
	7.	<i>S. rosaceus</i>	rosy rockfish
	8.	<i>Citharichthys sordidus</i>	Pacific sanddab
	9.	<i>Sebastes constellatus</i>	starry rockfish
	10.	<i>Paralabrax clathratus</i>	kelp bass
	11.	<i>Sebastes serranoides</i>	olive rockfish
	12.	<i>Himmites multirugosus</i>	rock scallop
	13.	<i>Sebastes auriculatus</i>	brown rockfish
	14.	<i>Haliotis corrugata</i>	pink abalone
	15.	<i>Ophiodon elongatus</i>	lingcod
Los Angeles	1.	<i>Genyonemus lineatus</i>	white croaker
	2.	<i>Sarda chiliensis</i>	Pacific bonito
	3.	<i>Scomber japonicus</i>	Pacific mackerel
	4.	<i>Sebastes paucispinis</i>	bocaccio
	5.	<i>Embiotoca jacksoni</i>	black surfperch
	6.	<i>Anoplopoma fimbria</i>	sablefish
	7.	<i>Sebastes serranoides</i>	olive rockfish
	8.	<i>Paralabrax clathratus</i>	kelp bass
	9.	<i>Sebastes miniatus</i>	vermillion rockfish
	10.	<i>Medialuna californiensis</i>	halfmoon
	11.	<i>Scorpaena guttata</i>	sculpin
	12.	<i>Sebastes mystinus</i>	blue rockfish
	13.	<i>Paralabrax nebulifer</i>	barred sand bass
	14.	<i>Caulolatilus princeps</i>	ocean whitefish
	15.	<i>Sebastes auriculatus</i>	brown rockfish

TABLE 5 cont.

County	Rank	Scientific name	Common name
Orange	1.	<i>Genyonemus lineatus</i>	white croaker
	2.	<i>Paralabrax clathratus</i>	kelp bass
	3.	<i>P. nebulifer</i>	barred sand bass
	4.	<i>Sarda chiliensis</i>	Pacific bonito
	5.	<i>Sphyræna argentea</i>	California barracuda
	6.	<i>Scomber japonicus</i>	Pacific mackerel
	7.	<i>Hirrites multirugosus</i>	rock scallop
	8.	<i>Paralabrax maculatofasciatus</i>	spotted sand bass
	9.	<i>Embiotoca jacksoni</i>	black surfperch
	10.	<i>Anoplopoma fimbria</i>	sablefish
	11.	<i>Scorpaena guttata</i>	sculpin
	12.	<i>Seriphus politus</i>	queenfish
	13.	<i>Sebastes goodei</i>	chilipepper
	14.	<i>Synodus lucioceps</i>	California lizardfish
	15.	<i>Sebastes paucispinis</i>	bocaccio
San Diego	1.	<i>Genyonemus lineatus</i>	white croaker
	2.	<i>Paralabrax nebulifer</i>	barred sand bass
	3.	<i>Sarda chiliensis</i>	Pacific bonito
	4.	<i>Paralabrax maculatofasciatus</i>	spotted sand bass
	5.	<i>P. clathratus</i>	kelp bass
	6.	<i>Sebastes serranoides</i>	olive rockfish
	7.	<i>Haliotis rufescens</i>	red abalone
	8.	<i>Scomber japonicus</i>	Pacific mackerel
	9.	<i>Sebastes chlorostictus</i>	greenspotted rockfish
	10.	<i>Haliotis fulgens</i>	green abalone
	11.	<i>Sebastes miniatus</i>	vermillion rockfish
	12.	<i>Caulolatilus princeps</i>	ocean whitefish
	13.	<i>Sebastes paucispinis</i>	bocaccio
	14.	<i>Hirrites multirugosus</i>	rock scallop
	15.	<i>Scorpaena guttata</i>	sculpin

SMB-26703

TABLE 6. Occurrence of Sublegal Fishes in Examined Catches.

Scientific name	Common name	No. measured	% Legal
<u>Fishes</u>			
<i>Atractoscion nobilis</i>	white seabass	266	6.4*
<i>Oncorhynchus tshawytscha</i>	king salmon	378	98.9
<i>Paralabrax clathratus</i>	kelp bass	5,160	84.7
<i>P. maculatofasciatus</i>	spotted sand bass	1,842	76.5
<i>P. nebulifer</i>	barred sand bass	5,562	85.5
<i>Paralichthys californicus</i>	California halibut	1,337	57.1
<i>Sphyraena argentea</i>	California barracuda	1,071	67.1
<u>Molluscs and Crustaceans</u>			
<i>Cancer antennarius</i>	rock crab	72	97.2
<i>Haliotis corrugata</i>	pink abalone	803	94.3
<i>H. cracherodii</i>	black abalone	196	90.3
<i>H. fulgens</i>	green abalone	758	98.8
<i>H. rufescens</i>	red abalone	1,296	94.9
<i>H. sorenseni</i>	white abalone	71	95.8
<i>Panulirus interruptus</i>	Calif. spiny lobster	464	96.6

* The 1975-76 California Sport Fishing Regulations allowed one sublegal size white seabass to be kept by an angler. Therefore, the short fish are not illegal, but they are less than minimum size.

APPENDIX

Effort Data and Most Commonly Landed
Fishes at Each Sample Location

SMB-26705

LOCATION: Gaviota

COUNTY: Santa Barbara

34 sample days
446 anglers
192 divers
2,709 angler-trip hours
1,150 diver-trip-hours
2,967 fishes sampled
64 species identified

Most Commonly Landed Species

<u>Scientific name</u>	<u>Common name</u>	<u>Number landed</u>	<u>% of total</u>
<i>Haliotis rufescens</i>	red abalone	439	15
<i>Sebastes atrovirens</i>	kelp rockfish	335	11
<i>S. caurinus</i>	copper rockfish	216	7
<i>S. mystinus</i>	blue rockfish	201	7
<i>S. auriculatus</i>	brown rockfish	181	6
<i>Clinocardium nuttalli</i>	basket cockle	150	5
<i>Cancer antennarius</i>	rock crab	147	5
<i>Panulirus interruptus</i>	Calif. spiny lobster	141	5
<i>Ophiodon elongatus</i>	lingcod	110	4
<i>Sebastes miniatus</i>	vermillion rockfish	93	3
			68%

LOCATION: Goleta

COUNTY: Santa Barbara

36 sample days
573 anglers
53 divers
3,112 angler-trip hours
266 diver-trip-hours
2,384 fishes sampled
59 species identified

Most Commonly Landed Species

<u>Scientific name</u>	<u>Common name</u>	<u>Number landed</u>	<u>% of total</u>
<i>Sebastes paucispinis</i>	bocaccio	461	19
<i>S. entomelas</i>	widow rockfish	394	17
<i>Genyonemus lineatus</i>	white croaker	354	15
<i>Paralabrax clathratus</i>	kelp bass	138	6
<i>Sebastes mystinus</i>	blue rockfish	103	4
<i>S. chlorostictus</i>	greenspotted rockfish	96	4
<i>S. caurinus</i>	copper rockfish	85	4
<i>S. rastrelliger</i>	grass rockfish	75	3
<i>S. atrovirens</i>	kelp rockfish	65	3
<i>S. miniatus</i>	vermillion rockfish	64	<u>3</u>
			78%

SMB-26707

LOCATION: Santa Barbara

COUNTY: Santa Barbara

44 sample days
2,853 anglers
139 divers
17,137 angler-trip-hours
992 diver-trip-hours
5,350 fishes sampled
87 species identified

Most Commonly Landed Species

<u>Scientific name</u>	<u>Common name</u>	<u>Number landed</u>	<u>% of total</u>
<i>Sebastes paucispinis</i>	bocaccio	427	8
<i>S. serranoides</i>	olive rockfish	412	8
<i>S. mystinus</i>	blue rockfish	389	7
<i>Oncorhynchus tshawytscha</i>	king salmon	355	7
<i>Sebastes entomelas</i>	widow rockfish	321	6
<i>S. caurinus</i>	copper rockfish	315	6
<i>Genyonemus lineatus</i>	white croaker	307	6
<i>Paralabrax clathratus</i>	kelp bass	272	5
<i>Sebastes miniatus</i>	vermillion rockfish	243	5
<i>S. rastrelliger</i>	grass rockfish	202	<u>4</u>
			62%

SMB-26708

LOCATION: Ventura

COUNTY: Ventura

42 sample days
1,449 anglers
104 divers
8,803 angler-trip-hours
666 diver-trip-hours
5,245 fishes sampled
85 species identified

Most Commonly Landed Species

<u>Scientific name</u>	<u>Common name</u>	<u>Number landed</u>	<u>% of total</u>
<i>Genyonemus lineatus</i>	white croaker	1,748	33
<i>Sebastes caurinus</i>	copper rockfish	438	8
<i>S. mystinus</i>	blue rockfish	300	6
<i>Hinnites multirugosus</i>	rock scallop	213	4
<i>Sebastes rastrelliger</i>	grass rockfish	195	4
<i>S. serranoides</i>	olive rockfish	165	3
<i>Paralabrax clathratus</i>	kelp bass	159	3
<i>Sebastes paucispinis</i>	bocaccio	153	3
<i>S. rosaceus</i>	rosy rockfish	138	3
<i>S. miniatus</i>	vermillion rockfish	136	<u>3</u>
			70%

SMB-26709

LOCATION: Oxnard

COUNTY: Ventura

47 sample days
3,768 anglers
366 divers
26,112 angler-trip-hours
2,602 diver-trip-hours
18,824 fishes sampled
108 species identified

Most Commonly Landed Species

<u>Scientific name</u>	<u>Common name</u>	<u>Number landed</u>	<u>% of total</u>
<i>Genyonemus lineatus</i>	white croaker	2,678	14
<i>Sebastes caurinus</i>	copper rockfish	1,888	10
<i>S. paucispinis</i>	bocaccio	1,477	8
<i>S. mystinus</i>	blue rockfish	1,435	8
<i>S. miniatus</i>	vermillion rockfish	832	4
<i>S. chlorostictus</i>	greenspotted rockfish	762	4
<i>Citharichthys sordidus</i>	Pacific sanddab	685	4
<i>Sebastes rosaceus</i>	rosy rockfish	684	4
<i>S. constellatus</i>	starry rockfish	619	3
<i>Paralabrax clathratus</i>	kelp bass	541	<u>3</u>
			62%

LOCATION: Paradise Cove Hoist

COUNTY: Los Angeles

48 sample days
960 anglers
59 divers
6,930 angler-trip-hours
261 diver-trip-hours
3,345 fishes sampled
82 species identified

Most Commonly Landed Species

<u>Scientific name</u>	<u>Common name</u>	<u>Number landed</u>	<u>% of total</u>
<i>Sebastes paucispinis</i>	bocaccio	508	15
<i>Genyonemus lineatus</i>	white croaker	322	10
<i>Sebastes rastrelliger</i>	grass rockfish	301	9
<i>Paralabrax clathratus</i>	kelp bass	269	8
<i>Sebastes serranoides</i>	olive rockfish	198	6
<i>Synodus luciocephalus</i>	California lizardfish	130	4
<i>Hinnites multirugosus</i>	rock scallop	126	4
<i>Sebastes chlorostictus</i>	greenspotted rockfish	113	3
<i>Anoplopoma fimbria</i>	sablefish	105	3
<i>Sebastes atrovirens</i>	kelp rockfish	102	<u>3</u>
			65%

SMB-26711

LOCATION: Paradise Cove Rental

COUNTY: Los Angeles

47 sample days
1,047 anglers
0 divers
8,005 angler-trip-hours
0 diver-trip-hours
3,334 fishes sampled
88 species identified

Most Commonly Landed Species

<u>Scientific name</u>	<u>Common name</u>	<u>Number landed</u>	<u>% of total</u>
<i>Genyonemus lineatus</i>	white croaker	840	25
<i>Sebastes paucispinis</i>	bocaccio	344	10
<i>S. rastrelliger</i>	grass rockfish	294	9
<i>Synodus lucioceps</i>	California lizardfish	217	7
<i>Sebastes serranoides</i>	olive rockfish	215	7
<i>Paralabrax olathratus</i>	kelp bass	181	5
<i>Sebastes caurinus</i>	copper rockfish	127	4
<i>S. atrovirens</i>	kelp rockfish	112	3
<i>S. miniatus</i>	vermillion rockfish	107	3
<i>S. auriculatus</i>	brown rockfish	103	<u>3</u>
			76%

SMB-26712

LOCATION: Marina Del Rey (October 1975 through June 1976)

COUNTY: Los Angeles

26 sample days
1,751 anglers
45 divers
10,635 angler-trip-hours
236 diver-trip-hours
7,336 fishes sampled
79 species identified

Most Commonly Landed Species

<u>Scientific name</u>	<u>Common name</u>	<u>Number landed</u>	<u>% of total</u>
<i>Genyonemus lineatus</i>	white croaker	1,814	25
<i>Sebastes paucispinis</i>	bocaccio	1,294	18
<i>Sarda chiliensis</i>	Pacific bonito	528	7
<i>Sebastes chlorostictus</i>	greenspotted rockfish	474	6
<i>Anoplopoma fimbria</i>	sablefish	388	5
<i>Sebastes serranoides</i>	olive rockfish	276	4
<i>S. goodei</i>	chilipepper	273	4
<i>S. elongatus</i>	greenstriped rockfish	178	2
<i>Embiotoca jacksoni</i>	black surfperch	164	2
<i>Sebastes miniatus</i>	vermillion rockfish	138	<u>2</u>
			75%

SMB-26713

LOCATION: Redondo Hoist

COUNTY: Los Angeles

33 sample days
4,406 anglers
130 divers
27,291 angler-trip-hours
599 diver-trip-hours
9,757 fishes sampled
108 species identified

Most Commonly Landed Species

<u>Scientific name</u>	<u>Common name</u>	<u>Number landed</u>	<u>% of total</u>
<i>Sarda chiliensis</i>	Pacific bonito	2,546	26
<i>Scomber japonicus</i>	Pacific mackerel	1,288	13
<i>Anoplopoma fimbria</i>	sablefish	829	8
<i>Sebastes paucispinis</i>	bocaccio	680	7
<i>Genyonemus lineatus</i>	white croaker	561	6
<i>Paralabrax olathratus</i>	kelp bass	393	4
<i>Sebastes mystinus</i>	blue rockfish	299	3
<i>Medialuna californiensis</i>	halfmoon	269	3
<i>Hinnites multirugosus</i>	rock scallop	267	3
<i>Caulolatilus princeps</i>	ocean whitefish	250	<u>3</u>
			76%

SMB-26714

LOCATION: Redondo Rental

COUNTY: Los Angeles

33 sample days
3,263 anglers
9 divers
21,121 angler-trip-hours
34 diver-trip-hours
6,181 fishes sampled
69 species identified

Most Commonly Landed Species

<u>Scientific name</u>	<u>Common name</u>	<u>Number landed</u>	<u>% of total</u>
<i>Scomber japonicus</i>	Pacific mackerel	2,603	42
<i>Sarda chiliensis</i>	Pacific bonito	2,390	39
<i>Genyonemus lineatus</i>	white croaker	457	7
<i>Paralichthys californicus</i>	California halibut	79	1
<i>Citharichthys sordidus</i>	Pacific sanddab	67	1
<i>Cymatogaster aggregata</i>	shiner surfperch	56	1
<i>Caulolatilus princeps</i>	ocean whitefish	50	1
<i>Hinnites multirugosus</i>	rock scallop	46	1
<i>Trachurus symmetricus</i>	jack mackerel	43	1
<i>Paralabrax clathratus</i>	kelp bass	31	<u>1</u>
			95%

SMB-26715

LOCATION: Cabrillo

COUNTY: Los Angeles

38 sample days
3,024 anglers
130 divers
17,798 angler-trip-hours
755 diver-trip-hours
18,045 fishes sampled
99 species identified

Most Commonly Landed Species

<u>Scientific name</u>	<u>Common name</u>	<u>Number landed</u>	<u>% of total</u>
<i>Genyonemus lineatus</i>	white croaker	11,006	61
<i>Embiotoca jacksoni</i>	black surfperch	929	5
<i>Scorpaena guttata</i>	sculpin	520	3
<i>Sebastes serranoides</i>	olive rockfish	519	3
<i>Anoplopoma fimbria</i>	sablefish	485	3
<i>Caulolatilus princeps</i>	ocean whitefish	358	2
<i>Medialuna californiensis</i>	halfmoon	343	2
<i>Paralabrax clathratus</i>	kelp bass	339	2
<i>Sebastes miniatus</i>	vermillion rockfish	323	2
<i>S. mystinus</i>	blue rockfish	322	<u>2</u>
			85%

SMB-26716

LOCATION: Golden Shore

COUNTY: Los Angeles

45 sample days
3,073 anglers
38 divers
17,926 angler-trip-hours
235 diver-trip-hours
10,595 fishes sampled
96 species identified

Most Commonly Landed Species

<u>Scientific name</u>	<u>Common name</u>	<u>Number landed</u>	<u>% of total</u>
<i>Genyonemus lineatus</i>	white croaker	4,793	45
<i>Embiotoca jacksoni</i>	black surfperch	1,053	10
<i>Sebastes serranoides</i>	olive rockfish	551	5
<i>Medialuna californica</i>	halfmoon	373	4
<i>Scorpaena guttata</i>	sculpin	275	3
<i>Sebastes paucispinis</i>	bocaccio	263	2
<i>S. miniatus</i>	vermillion rockfish	256	2
<i>Paralabrax nebulifer</i>	barred sand bass	234	2
<i>P. clathratus</i>	kelp bass	210	2
<i>Caulolatilus princeps</i>	ocean whitefish	191	<u>2</u>
			77%

SMB-26717

LOCATION: Sunset Aquatic Park

COUNTY: Orange

28 sample days
1,406 anglers
52 divers
9,383 angler-trip-hours
438 diver-trip-hours
3,377 fishes sampled
83 species identified

Most Commonly Landed Species

<u>Scientific name</u>	<u>Common name</u>	<u>Number landed</u>	<u>% of total</u>
<i>Genyonemus lineatus</i>	white croaker	1,392	41
<i>Anoplopoma fimbria</i>	sablefish	261	8
<i>Sebastes miniatus</i>	vermillion rockfish	103	3
<i>Citharichthys sordidus</i>	Pacific sanddab	89	3
<i>Embiotoca jacksoni</i>	black surfperch	86	3
<i>Paralabrax nebulifer</i>	barred sand bass	80	2
<i>Sebastes serranoides</i>	olive rockfish	77	2
<i>Paralabrax clathratus</i>	kelp bass	74	2
<i>Scomber japonicus</i>	Pacific mackerel	72	2
<i>Medialuna californiensis</i>	halfmoon	70	<u>2</u>
			68%

SMB-26718

LOCATION: Art's Landing

COUNTY: Orange

31 sample days
918 anglers
0 divers
5,651 angler-trip-hours
0 diver-trip-hours
1,417 fishes sampled
48 species identified

Most Commonly Landed Species

<u>Scientific name</u>	<u>Common name</u>	<u>Number landed</u>	<u>% of total</u>
<i>Genyonemus lineatus</i>	white croaker	352	25
<i>Paralabrax maculatofasciatus</i>	spotted sand bass	345	24
<i>P. nebulifer</i>	barred sand bass	117	8
<i>Embiotoca jacksoni</i>	black surfperch	82	6
<i>Phanerodon furcatus</i>	white surfperch	67	5
<i>Roncador stevensii</i>	spotfin croaker	50	4
<i>Sebastes serranoides</i>	olive rockfish	47	3
<i>Paralichthys californicus</i>	California halibut	41	3
<i>Scorpaena guttata</i>	sculpin	35	2
<i>Synodus lucioceps</i>	California lizardfish	34	<u>2</u>
			82%

SMB-26719

LOCATION: Bayside

COUNTY: Orange

37 sample days
2,001 anglers
126 divers
13,114 angler-trip-hours
614 diver-trip-hours
3,292 fishes sampled
92 species identified

Most Commonly Landed Species

<u>Scientific name</u>	<u>Common name</u>	<u>Number landed</u>	<u>% of total</u>
<i>Genyonemus lineatus</i>	white croaker	762	23
<i>Embiotoca jacksoni</i>	black surfperch	284	9
<i>Hinnites multirugosus</i>	rock scallop	236	7
<i>Paralabrax nebulifer</i>	barred sand bass	172	5
<i>P. maculatofasciatus</i>	spotted sand bass	140	4
<i>Anoplopoma fimbria</i>	sablefish	125	4
<i>Scomber japonicus</i>	Pacific mackerel	113	3
<i>Phanerodon furcatus</i>	white surfperch	100	3
<i>Paralabrax clathratus</i>	kelp bass	92	3
<i>Synodus lucioceps</i>	California lizardfish	87	3
			64%

SMB-26720

LOCATION: Newport Dunes

COUNTY: Orange

32 sample days
908 anglers
14 divers
6,180 angler-trip-hours
66 diver-trip-hours
1,273 fishes sampled
65 species identified

Most Commonly Landed Species

<u>Scientific name</u>	<u>Common name</u>	<u>Number landed</u>	<u>% of total</u>
<i>Genyonemus lineatus</i>	white croaker	266	21
<i>Sebastes goodei</i>	chilipepper	135	11
<i>S. paucispinis</i>	bocaccio	76	6
<i>Embiotoca jacksoni</i>	black surfperch	62	5
<i>Paralabrax nebulifer</i>	barred sand bass	53	4
<i>Sebastes elongatus</i>	greenstriped rockfish	44	3
<i>Anoplopoma fimbria</i>	sablefish	36	3
<i>Paralabrax clathratus</i>	kelp bass	35	3
<i>Synodus lucioceps</i>	California lizardfish	32	3
<i>Paralabrax maculatofasciatus</i>	spotted sand bass	31	<u>2</u>
			61%

SMB-26721

LOCATION: Dana Launch

COUNTY: Orange

41 sample days
6,143 anglers
256 divers
41,511 angler-trip-hours
1,108 diver-trip-hours
10,478 fishes sampled
104 species identified

Most Commonly Landed Species

<u>Scientific name</u>	<u>Common name</u>	<u>Number landed</u>	<u>% of total</u>
<i>Genyonemus lineatus</i>	white croaker	1,756	17
<i>Paralabrax clathratus</i>	kelp bass	1,304	12
<i>Sarda chiliensis</i>	Pacific bonito	1,262	12
<i>Paralabrax nebulifer</i>	barred sand bass	1,051	10
<i>Sphyræna argentea</i>	California barracuda	906	9
<i>Scomber japonicus</i>	Pacific mackerel	669	6
<i>Seriphus politus</i>	queenfish	341	3
<i>Hinnites multirugosus</i>	rock scallop	324	3
<i>Scorpaena guttata</i>	sculpin	301	3
<i>Synodus lucioceps</i>	California lizardfish	154	<u>1</u>
			76%

SMB-26722

LOCATION: Oceanside

COUNTY: San Diego

39 sample days
1,781 anglers
51 divers
12,246 angler-trip-hours
326 diver-trip-hours
4,660 fishes sampled
85 species identified

Most Commonly Landed Species

<u>Scientific name</u>	<u>Common name</u>	<u>Number landed</u>	<u>% of total</u>
<i>Genyonemus lineatus</i>	white croaker	1,796	39
<i>Paralabrax clathratus</i>	kelp bass	432	9
<i>Sarda chiliensis</i>	Pacific bonito	342	7
<i>Sebastes chlorostictus</i>	greenspotted rockfish	165	4
<i>S. goodei</i>	chilipepper	165	4
<i>Paralabrax nebulifer</i>	barred sand bass	155	3
<i>Sebastes paucispinis</i>	bocaccio	117	3
<i>Scomber japonicus</i>	Pacific mackerel	114	2
<i>Sphyræna argentea</i>	California barracuda	97	2
<i>Anoplopoma fimbria</i>	sablefish	72	<u>2</u>
			75%

SMB-26723

LOCATION: Ski Beach

County: San Diego

37 sample days
656 anglers
118 divers
4,809 angler-trip-hours
487 diver-trip-hours
1,873 fishes sampled
74 species identified

Most Commonly Landed Species

<u>Scientific name</u>	<u>Common name</u>	<u>Number landed</u>	<u>% of total</u>
<i>Sarda chiliensis</i>	Pacific bonito	205	11
<i>Haliotis rufescens</i>	red abalone	155	8
<i>Scomber japonicus</i>	Pacific mackerel	151	8
<i>Caulolatilus princeps</i>	ocean whitefish	105	6
<i>Paralabrax clathratus</i>	kelp bass	91	5
<i>Sebastes serranoides</i>	olive rockfish	78	4
<i>S. paucispinus</i>	bocaccio	69	4
<i>Sphyræna argentea</i>	Calif. barracuda	59	3
<i>Sebastes chlorostictus</i>	greenspotted rockfish	58	3
<i>Genyonemus lineatus</i>	white croaker	57	<u>3</u>
			55%

SMB-26724

LOCATION: Dana Basin

COUNTY: San Diego

40 sample days
3,281 anglers
205 divers
23,241 angler-trip-hours
895 diver-trip-hours
7,650 fishes sampled
104 species identified

Most Commonly Landed Species

<u>Scientific name</u>	<u>Common name</u>	<u>Number landed</u>	<u>% of total</u>
<i>Sarda chiliensis</i>	Pacific bonito	1,727	23
<i>Paralabrax clathratus</i>	kelp bass	430	6
<i>Scomber japonicus</i>	Pacific mackerel	408	5
<i>Sebastes serranoides</i>	olive rockfish	398	5
<i>S. chlorostictus</i>	greenspotted rockfish	335	4
<i>S. miniatus</i>	vermillion rockfish	249	3
<i>S. paucispinus</i>	bocaccio	225	3
<i>Hinnites multirugosus</i>	rock scallop	216	3
<i>Geryonemus lineatus</i>	white croaker	208	3
<i>Haliotis rufescens</i>	red abalone	188	<u>2</u>
			57%

SMB-26725

LOCATION: Shelter Island

COUNTY: San Diego

37 sample days
4,438 anglers
412 divers
32,606 angler-trip-hours
1,522 diver-trip-hours
12,065 fishes sampled
108 species identified

Most Commonly Landed Species

<u>Scientific name</u>	<u>Common name</u>	<u>Number landed</u>	<u>% of total</u>
<i>Paralabrax nebulifer</i>	barred sand bass	3,183	26
<i>Genyonemus lineatus</i>	white croaker	2,045	17
<i>Paralabrax maculatofasciatus</i>	spotted sand bass	817	7
<i>Sarda chiliensis</i>	Pacific bonito	444	4
<i>Haliotis fulgens</i>	green abalone	435	4
<i>Sebastes serranoides</i>	olive rockfish	379	3
<i>Haliotis rufescens</i>	red abalone	378	3
<i>Paralabrax clathratus</i>	kelp bass	335	3
<i>Thunnus alalunga</i>	albacore	307	3
<i>Citharichthys sordidus</i>	Pacific sanddab	198	<u>2</u>
			72%

SMB-26726

LOCATION: Chula Vista

COUNTY: San Diego

40 sample days
502 anglers
19 divers
3,074 angler-trip-hours
82 diver-trip-hours
753 fishes sampled
46 species identified

Most Commonly Landed Species

<u>Scientific name</u>	<u>Common name</u>	<u>Number landed</u>	<u>% of total</u>
<i>Paralabrax nebulifer</i>	barred sand bass	216	29
<i>Genyonemus lineatus</i>	white croaker	128	17
<i>Paralabrax maculatofasciatus</i>	spotted sand bass	109	14
<i>Sarda chiliensis</i>	Pacific bonito	63	8
<i>Sebastes serranoides</i>	olive rockfish	29	4
<i>S. miniatus</i>	vermillion rockfish	22	3
<i>S. dallii</i>	calico rockfish	18	2
<i>Paralichthys californicus</i>	Calif. halibut	18	2
<i>Sebastes rosaceus</i>	rosy rockfish	17	2
<i>S. umbrosus</i>	honeycomb rockfish	14	<u>2</u>
			83%

SMB-26727

LOCATION: Glorietta

COUNTY: San Diego

45 sample days
763 anglers
61 divers
4,898 angler-trip-hours
255 diver-trip-hours
1,929 fishes sampled
66 species identified

Most Commonly Landed Species

<u>Scientific name</u>	<u>Common name</u>	<u>Number landed</u>	<u>% of total</u>
<i>Paralabrax nebulifer</i>	barred sand bass	557	29
<i>Gemyonemus lineatus</i>	white croaker	330	17
<i>Paralabrax maculatofasciatus</i>	spotted sand bass	278	14
<i>Sarda chiliensis</i>	Pacific bonito	86	4
<i>Haliotis rufescens</i>	red abalone	81	4
<i>Paralabrax clathratus</i>	kelp bass	63	3
<i>Semicossyphus pulcher</i>	Calif. sheephead	52	3
<i>Hinnites multirugosus</i>	rock scallop	32	2
<i>Haliotis fulgens</i>	green abalone	31	2
<i>Sebastes atrovirens</i>	kelp rockfish	30	<u>2</u>
			80%

SMB-26728